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Occupations in major groups

- 11 management and
administration
- 21 natural sciences,
engineering and
mathematics
- 33 art, literature and
performing arts
- 37 sport and recreation
- 41 clerical
- 51 sales
- 81/82 processing
- 83 machining
- 85 product fabricating,
assembling
and repairing

Canadian
Classification and
Dictionary of
Occupations

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National Occupational
Analysis and
Classification Systems

Systèmes nationaux
d'analyse et de
classification des professions



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IMPORTANT NOTICE

Volume 1 of the Canadian Classification and Dictionary of Occupations (CCDO) was published in 1971; since then, a number of the 23 major groups of occupations appearing in Volume 1 have been revised and republished in soft covered booklets.

This publication is strictly a reprint of all CCDO major groups that have not been revised since 1971.

Any additional descriptions that have been developed for occupations in these unrevised groups will appear in the latest edition of the CCDO GUIDE.

It is essential that this booklet always be used in conjunction with the CCDO GUIDE which is available from the Canadian Government Publishing Centre, Supply and Services, Hull, Quebec, K1A 0S9, or their agents across Canada.

SPECIAL NOTICE

In determining the data for inclusion in CCDO publications, many thousands of jobs were examined and analyzed to determine their content. No facts were collected, however, on such matters as hours of labour, wages or salaries, or other related employment practices.

As the content of specific jobs varies with each individual establishment most of the occupational definitions describe the work performed in broad terms. For these reasons, the data in this publication cannot be considered as standards for setting working conditions, pay scales or related employment conditions, and Employment and Immigration Canada accepts no responsibility for the setting of these or other jurisdictional matters.

It is to be noted that the presence or absence of Physical Activities (PA) factors in a CCDO occupational definition is not to be misconstrued as indicating that the physically handicapped can or cannot perform the duties of that occupations.

THE CCDO STRUCTURE BY MAJOR GROUP

11	Managerial, Administrative and Related Occupations	THIS BOOK
21	Occupations in Natural Sciences, Engineering and Mathematics	
23	Occupations in Social Sciences and Related Fields	
25	Occupations in Religion	
27	Teaching and Related Occupations	
31	Occupations in Medicine and Health	
33	Artistic, Literary, Performing Arts and Related Occupations	THIS BOOK
37	Occupations in Sport and Recreation	
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71	Farming, Horticultural and Animal-Husbandry Occupations	
73	Fishing, Trapping and Related Occupations	THIS BOOK
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77	Mining and Quarrying Including Oil and Gas Field Occupations	
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85	Product Fabricating, Assembling and Repairing Occupations	
87	Construction Trades Occupations	THIS BOOK
91	Transport Equipment Operating Occupations	
93	Material-Handling and Related Occupations, n.e.c.	
95	Other Crafts and Equipment Operating Occupations	
99	Occupations Not Elsewhere Classified	

UNIT GROUPS

MAJOR GROUP 11 - MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS

111 OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT

- 1111 Members of Legislative Bodies
- 1113 Government Administrators
- 1115 Postmasters
- 1116 Inspectors and Regulatory Officers, Government
- 1119 Officials and Administrators Unique to Government, n.e.c.

113/114 OTHER MANAGERS AND ADMINISTRATORS

- 1130 General Managers and Other Senior Officials
- 1131 Management Occupations: Natural Sciences, Engineering and Mathematics
- 1132 Management Occupations, Social Sciences and Related Fields
- 1133 Administrators in Teaching and Related Fields
- 1134 Administrators in Medicine and Health
- 1135 Financial Management Occupations
- 1136 Personnel and Industrial Relations Management Occupations
- 1137 Sales and Advertising Management Occupations
- 1141 Purchasing Management Occupations
- 1142 Services Management Occupations
- 1143 Production Management Occupations
- 1145 Management Occupations, Construction Operations
- 1147 Management Occupations, Transport and Communications Operations
- 1149 Other Managers and Administrators, n.e.c.

117 OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION

- 1171 Accountants, Auditors and Other Financial Officers
- 1173 Organization and Methods Analysts
- 1174 Personnel and Related Officers
- 1175 Purchasing Officers and Buyers, Except Wholesale and Retail Trade
- 1176 Inspectors and Regulatory Officers, Non-Government
- 1179 Occupations Related to Management and Administration, n.e.c.

MAJOR GROUP 21 - OCCUPATIONS IN NATURAL SCIENCES, ENGINEERING AND MATHEMATICS

211 OCCUPATIONS IN PHYSICAL SCIENCES

- 2111 Chemists
- 2112 Geologists and Related Occupations
- 2113 Physicists
- 2114 Meteorologists
- 2117 Physical Sciences Technologists and Technicians
- 2119 Occupations in Physical Sciences, n.e.c.

213 OCCUPATIONS IN LIFE SCIENCES

- 2131 Agriculturists and Related Scientists
- 2133 Biologists and Related Scientists
- 2135 Life Sciences Technologists and Technicians
- 2139 Occupations in Life Sciences, n.e.c.

214/215 ARCHITECTS AND ENGINEERS

- 2141 Architects
- 2142 Chemical Engineers
- 2143 Civil Engineers
- 2144 Electrical Engineers
- 2145 Industrial Engineers
- 2147 Mechanical Engineers
- 2151 Metallurgical Engineers
- 2153 Mining Engineers
- 2154 Petroleum Engineers
- 2155 Aerospace Engineers
- 2157 Nuclear Engineers
- 2159 Architects and Engineers, n.e.c.

216 OTHER OCCUPATIONS IN ARCHITECTURE AND ENGINEERING

- 2160 Supervisors, Other Occupations in Architecture and Engineering
- 2161 Surveyors
- 2163 Draughtsmen
- 2165 Architectural and Engineering Technologists and Technicians
- 2169 Other Occupations in Architecture and Engineering, n.e.c.

218 OCCUPATIONS IN MATHEMATICS, STATISTICS, SYSTEMS ANALYSIS AND RELATED FIELDS

- 2181 Mathematicians, Statisticians and Actuaries
- 2183 Systems Analysts, Computer Programmers and Related Occupations
- 2189 Occupations in Mathematics, Statistics, Systems Analysis and Related Fields, n.e.c.

MAJOR GROUP 33 - ARTISTIC, LITERARY, PERFORMING ARTS AND RELATED OCCUPATIONS

331 OCCUPATIONS IN FINE AND COMMERCIAL ART, PHOTOGRAPHY AND RELATED FIELDS

- 3311 Painters, Sculptors and Related Artists
- 3313 Product and Interior Designers
- 3314 Advertising and Illustrating Artists
- 3315 Photographers and Cameramen
- 3319 Occupations in Fine and Commercial Art, Photography and Related Fields,
n.e.c.

333 OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS

- 3330 Producers and Directors, Performing and Audiovisual Arts
- 3332 Musicians
- 3333 Choreographers and Dancers
- 3335 Actors
- 3337 Radio and Television Announcers
- 3339 Occupations in Performing and Audiovisual Arts, n.e.c.

335 OCCUPATIONS IN WRITING

- 3351 Writers and Editors, Publication
- 3353 Writers and Editors: Radio, Television, Theatre and Motion Pictures
- 3355 Translators and Interpreters
- 3359 Occupations in Writing, n.e.c.

MAJOR GROUP 37 - OCCUPATIONS IN SPORT AND RECREATION

371 OCCUPATIONS IN SPORT AND RECREATION

- 3710 Coaches, Trainers, Instructors and Managers, Sport and Recreation
- 3711 Referees and Related Officials
- 3713 Athletes
- 3715 Attendants, Sport and Recreation
- 3719 Occupations in Sport and Recreation, n.e.c.

MAJOR GROUP 41 - CLERICAL AND RELATED OCCUPATIONS

411 STENOGRAPHIC AND TYPING OCCUPATIONS

- 4110 Supervisors, Stenographic and Typing Occupations
- 4111 Secretaries and Stenographers
- 4113 Typists and Clerk-Typists

413 BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS

- 4130 Supervisors, Bookkeeping, Account-Recording and Related Occupations
- 4131 Bookkeepers and Accounting Clerks
- 4133 Tellers and Cashiers
- 4135 Insurance, Bank and Other Finance Clerks
- 4137 Statistical Clerks
- 4139 Bookkeeping, Account-Recording and Related Occupations, n.e.c.

414 OFFICE MACHINE AND ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS

- 4140 Supervisors, Office Machine and Electronic Data-Processing Equipment Operators
- 4141 Office Machine Operators
- 4143 Electronic Data-Processing Equipment Operators

415 MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS

- 4150 Supervisors: Material Recording, Scheduling and Distributing Occupations
- 4151 Production Clerks
- 4153 Shipping and Receiving Clerks
- 4155 Stock Clerks and Related Occupations
- 4157 Weighers
- 4159 Material Recording, Scheduling and Distributing Occupations, n.e.c.

416 LIBRARY, FILE AND CORRESPONDENCE CLERKS AND RELATED OCCUPATIONS

- 4160 Supervisors: Library, File and Correspondence Clerks and Related Occupations
- 4161 Library and File Clerks
- 4169 Library, File and Correspondence Clerks and Related Occupations, n.e.c.

417 RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS

- 4170 Supervisors: Reception, Information, Mail and Message Distribution Occupations
- 4171 Receptionists and Information Clerks
- 4172 Mail Carriers
- 4173 Mail and Postal Clerks
- 4175 Telephone Operators
- 4177 Messengers
- 4179 Reception, Information, Mail and Message Distribution Occupations, n.e.c.

419 OTHER CLERICAL AND RELATED OCCUPATIONS

- 4190 Supervisors, Other Clerical and Related Occupations, n.e.c.
- 4191 Collectors
- 4192 Adjusters, Claim
- 4193 Travel Clerks, Ticket, Station and Freight Agents
- 4194 Hotel Clerks
- 4195 Personnel Clerks
- 4197 General Office Clerks
- 4199 Other Clerical and Related Occupations, n.e.c.

MAJOR GROUP 51 - SALES OCCUPATIONS

513/514 SALES OCCUPATIONS, COMMODITIES

- 5130 Supervisors: Sales Occupations, Commodities
- 5131 Technical Salesmen and Related Advisers
- 5133 Commercial Travellers
- 5135 Salesmen and Salespersons, Commodities, n.e.c.
- 5137 Sales Clerks, Commodities
- 5141 Street Vendors and Door-to-Door Salesmen
- 5143 Newsboys
- 5145 Service Station Attendants
- 5149 Sales Occupations, Commodities, n.e.c.

517 SALES OCCUPATIONS, SERVICES

- 5170 Supervisors: Sales Occupations, Services
- 5171 Insurance Salesmen and Agents
- 5172 Real Estate Salesmen
- 5173 Salesmen and Traders, Securities
- 5174 Advertising Salesmen
- 5177 Business Services Salesmen
- 5179 Sales Occupations: Services, n.e.c.

519 OTHER SALES OCCUPATIONS

- 5190 Supervisors, Other Sales Occupations
- 5191 Buyers, Wholesale and Retail Trade
- 5193 Driver-Salesmen
- 5199 Other Sales Occupations, n.e.c.

MAJOR GROUP 81/82 - PROCESSING OCCUPATIONS

811 MINERAL ORE TREATING OCCUPATIONS

- 8110 Foremen, Mineral Ore Treating Occupations
- 8111 Crushing and Grinding Occupations, Mineral Ores
- 8113 Mixing, Separating, Filtering and Related Occupations, Mineral Ores
- 8115 Melting and Roasting Occupations, Mineral Ores
- 8116 Inspecting, Testing, Grading and Sampling Occupations, Mineral Ore Treating
- 8118 Occupations in Labouring and Other Elemental Work, Mineral Ore Treating
- 8119 Mineral Ore Treating Occupations, n.e.c.

813/814 METAL PROCESSING AND RELATED OCCUPATIONS

- 8130 Foremen, Metal Processing and Related Occupations
- 8131 Metal Smelting, Converting and Refining Furnacemen
- 8133 Metal Heat-Treating Occupations
- 8135 Metal Rolling Occupations
- 8137 Moulding, Coremaking and Metal Casting Occupations
- 8141 Metal Extruding and Drawing Occupations
- 8143 Plating, Metal Spraying and Related Occupations
- 8146 Inspecting, Testing, Grading, and Sampling Occupations, Metal Processing
- 8148 Occupations in Labouring and Other Elemental Work, Metal Processing
- 8149 Metal Processing and Related Occupations, n.e.c.

815 CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS

- 8150 Foremen: Clay, Glass and Stone Processing, Forming and Related Occupations
- 8151 Furnacemen and Kilnmen: Clay, Glass and Stone
- 8153 Separating, Crushing, Grinding and Mixing Occupations: Clay, Glass and Stone
- 8155 Forming Occupations: Clay, Glass and Stone
- 8156 Inspecting, Testing and Grading Occupations: Clay, Glass and Stone Processing and Forming
- 8158 Occupations in Labouring and Other Elemental Work: Clay, Glass and Stone Processing and Forming
- 8159 Clay, Glass and Stone Processing, Forming and Related Occupations, n.e.c.

816/817 CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS

- 8160 Foremen: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations
- 8161 Mixing and Blending Occupations, Chemicals and Related Materials
- 8163 Filtering, Straining and Separating Occupations, Chemicals and Related Materials
- 8165 Distilling, Subliming and Carbonizing Occupations, Chemicals and Related Materials
- 8167 Roasting, Cooking and Drying Occupations, Chemicals and Related Materials
- 8171 Crushing and Grinding Occupations, Chemicals and Related Materials
- 8173 Coating and Calendering Occupations, Chemicals and Related Materials
- 8176 Inspecting, Testing and Sampling Occupations: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing
- 8178 Occupations in Labouring and Other Elemental Work: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing
- 8179 Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations, n.e.c.

821/822 FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS

- 8210 Foremen: Food, Beverage and Related Processing Occupations
- 8211 Flour and Grain Milling Occupations
- 8213 Baking, Confectionery Making and Related Occupations
- 8215 Slaughtering and Meat Cutting, Canning, Curing and Packing Occupations
- 8217 Fish Canning, Curing and Packing Occupations
- 8221 Fruit and Vegetable Canning, Preserving and Packing Occupations
- 8223 Milk Processing and Related Occupations
- 8225 Sugar Processing and Related Occupations
- 8226 Inspecting, Testing, Grading and Sampling Occupations: Food, Beverage and Related Processing
- 8227 Beverage Processing Occupations
- 8228 Occupations in Labouring and Other Elemental Work: Food, Beverage and Related Processing
- 8229 Food, Beverage and Related Processing Occupations, n.e.c.

823 WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP

- 8230 Foremen: Wood Processing Occupations, Except Paper Pulp
- 8231 Sawmill Sawyers and Related Occupations
- 8233 Plywood Making and Related Occupations
- 8235 Wood Treating Occupations
- 8236 Inspecting, Testing and Grading Occupations: Wood Processing, Except Paper Pulp
- 8238 Occupations in Labouring and Other Elemental Work: Wood Processing, Except Paper Pulp
- 8239 Wood Processing Occupations, Except Paper Pulp, n.e.c.

825 PULP AND PAPERMAKING AND RELATED OCCUPATIONS

- 8250 Foremen, Pulp and Papermaking and Related Occupations
- 8251 Cellulose Pulp Preparing Occupations
- 8253 Papermaking and Finishing Occupations
- 8256 Inspecting, Testing, Grading and Sampling Occupations, Pulp and Papermaking
- 8258 Occupations In Labouring and Other Elemental Work, Pulp and Papermaking
- 8259 Pulp and Papermaking and Related Occupations, n.e.c.

826/827 TEXTILE PROCESSING OCCUPATIONS

- 8260 Foremen, Textile Processing Occupations
- 8261 Textile Fibre Preparing Occupations
- 8263 Textile Spinning and Twisting Occupations
- 8265 Textile Winding and Reeling Occupations
- 8267 Textile Weaving Occupations
- 8271 Knitting Occupations
- 8273 Textile Bleaching and Dyeing Occupations
- 8275 Textile Finishing and Calendering Occupations
- 8276 Inspecting, Testing, Grading and Sampling Occupations, Textile Processing
- 8278 Occupations in Labouring and Other Elemental Work, Textile Processing
- 8279 Textile Processing Occupations, n.e.c.

829 OTHER PROCESSING OCCUPATIONS

- 8290 Foremen, Other Processing Occupations
- 8293 Tobacco Processing Occupations
- 8295 Hide and Pelt Processing Occupations
- 8296 Inspecting, Testing, Grading and Sampling Occupations, Processing, n.e.c.
- 8298 Occupations in Labouring and Elemental Work, Other Processing
- 8299 Other Processing Occupations, n.e.c.

MAJOR GROUP 83 - MACHINING AND RELATED OCCUPATIONS

831 METAL MACHINING OCCUPATIONS

- 8310 Foremen, Metal Machining Occupations
- 8311 Tool-and Die-Making Occupations
- 8313 Machinist and Machine-Tool Setting-Up Occupations
- 8315 Machine-Tool Operating Occupations
- 8316 Inspecting and Testing Occupations, Metal Machining
- 8319 Metal Machining Occupations, n.e.c.

833 METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING

- 8330 Foremen, Metal Shaping and Forming Occupations, Except Machining
- 8331 Forging Occupations
- 8333 Sheet-Metal Workers
- 8334 Metalworking-Machine Operators, n.e.c.
- 8335 Welding and Flame Cutting Occupations
- 8336 Inspecting and Testing Occupations, Metal Shaping and Forming, Except
Machining
- 8337 Boilermakers, Platers and Structural-Metal Workers
- 8339 Metal Shaping and Forming Occupations, Except Machining, n.e.c.

835 WOOD MACHINING OCCUPATIONS

- 8350 Foremen, Wood Machining Occupations
- 8351 Wood Patternmaking Occupations
- 8353 Wood Sawing and Related Occupations, Except Sawmill
- 8355 Planing, Turning, Shaping and Related Wood Machining Occupations
- 8356 Inspecting Occupations, Wood Machining
- 8357 Wood Sanding Occupations
- 8359 Wood Machining Occupations, n.e.c.

837 CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS

- 8370 Foremen: Clay, Glass, Stone and Related Materials Machining Occupations
- 8371 Cutting and Shaping Occupations: Clay, Glass, Stone and Related Materials
- 8373 Abrading and Polishing Occupations: Clay, Glass, Stone and Related
Materials
- 8376 Inspecting Occupations: Clay, Glass, Stone and Related Materials Machining
- 8379 Clay, Glass, Stone and Related Materials Machining Occupations, n.e.c.

839 OTHER MACHINING AND RELATED OCCUPATIONS

- 8390 Foremen, Other Machining and Related Occupations, n.e.c.
- 8391 Engravers, Etchers and Related Occupations
- 8393 Filing, Grinding, Buffing, Cleaning and Polishing Occupations, n.e.c.
- 8395 Patternmakers and Mouldmakers, n.e.c.
- 8396 Inspecting and Testing Occupations, Machining, n.e.c.
- 8399 Other Machining and Related Occupations, n.e.c.

**MAJOR GROUP 85 - PRODUCT FABRICATING,
ASSEMBLING AND REPAIRING OCCUPATIONS**

**851/852 FABRICATING AND ASSEMBLING OCCUPATIONS, METAL
PRODUCTS, N.E.C.**

- 8510 Foremen, Fabricating and Assembling Occupations, Metal Products, n.e.c.
- 8511 Engine and Related Equipment Fabricating and Assembling Occupations,
n.e.c.
- 8513 Motor Vehicle Fabricating and Assembling Occupations, n.e.c.
- 8515 Aircraft Fabricating and Assembling Occupations, n.e.c.
- 8523 Industrial, Farm, Construction and Other Mechanized Equipment and
Machinery Fabricating and Assembling Occupations, n.e.c.
- 8525 Business and Commercial Machines Fabricating and Assembling Occupations,
n.e.c.
- 8526 Inspecting and Testing Occupations, Fabricating and Assembling Metal
Products, n.e.c.
- 8527 Precision Instruments and Related Equipment Fabricating and Assembling
Occupations, n.e.c.
- 8528 Occupations in Labouring and Other Elemental Work, Fabricating and
Assembling Metal Products, n.e.c.
- 8529 Other Fabricating and Assembling Occupations, Metal Products, n.e.c.

**853 FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING
OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED
EQUIPMENT**

- 8530 Foremen: Fabricating, Assembling, Installing and Repairing Occupations,
Electrical, Electronic and Related Equipment
- 8531 Electrical Equipment Fabricating and Assembling Occupations
- 8533 Electrical and Related Equipment Installing and Repairing Occupations, n.e.c.
- 8534 Electronic Equipment Fabricating and Assembling Occupations
- 8535 Electronic and Related Equipment Installing and Repairing Occupations, n.e.c.
- 8536 Inspecting and Testing Occupations: Fabricating, Assembling, Installing and
Repairing Electrical, Electronic and Related Equipment
- 8537 Radio and Television Service Repairmen
- 8538 Occupations in Labouring and Other Elemental Work: Fabricating,
Assembling, Installing and Repairing Electrical, Electronic and Related
Equipment
- 8539 Fabricating, Assembling, Installing and Repairing Occupations: Electrical,
Electronic and Related Equipment, n.e.c.

**854 FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS,
WOOD PRODUCTS**

- 8540 Foremen: Fabricating, Assembling and Repairing Occupations, Wood
Products
- 8541 Cabinet and Wood Furniture Makers
- 8546 Inspecting and Grading Occupations: Fabricating, Assembling and Repairing,
Wood Products
- 8548 Occupations in Labouring and Other Elemental Work: Fabricating,
Assembling and Repairing, Wood Products
- 8549 Fabricating, Assembling and Repairing Occupations, Wood Products, n.e.c.

**855/856 FABRICATING, ASSEMBLING AND REPAIRING
OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS**

- 8550 Foremen: Fabricating, Assembling and Repairing Occupations: Textile, Fur and Leather Products
- 8551 Patternmaking, Marking and Cutting Occupations: Textile, Fur and Leather Products
- 8553 Tailors and Dressmakers
- 8555 Furriers
- 8557 Milliners, Hat and Cap Makers
- 8561 Shoemaking and Repairing Occupations
- 8562 Upholsterers
- 8563 Sewing Machine Operators, Textile and Similar Materials
- 8566 Inspecting, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
- 8568 Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
- 8569 Fabricating, Assembling and Repairing Occupations: Textile, Fur and Leather Products, n.e.c.

**857 FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS,
RUBBER, PLASTIC AND RELATED PRODUCTS**

- 8570 Foremen: Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products
- 8571 Bonding and Cementing Occupations, Rubber, Plastic and Related Products
- 8573 Moulding Occupations, Rubber, Plastic and Related Products
- 8575 Cutting and Finishing Occupations, Rubber, Plastic and Related Products
- 8576 Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
- 8578 Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
- 8579 Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products, n.e.c.

858 MECHANICS AND REPAIRMEN, N.E.C.

- 8580 Foremen: Mechanics and Repairmen, n.e.c.
- 8581 Motor-Vehicle Mechanics and Repairmen
- 8582 Aircraft Mechanics and Repairmen
- 8583 Rail Transport Equipment Mechanics and Repairmen
- 8584 Industrial, Farm and Construction Machinery Mechanics and Repairmen
- 8585 Business and Commercial Machine Mechanics and Repairmen
- 8586 Inspecting and Testing Occupations, Equipment Repair, n.e.c.
- 8587 Watch and Clock Repairmen
- 8588 Precision-Instrument Mechanics and Repairmen
- 8589 Other Mechanics and Repairmen, n.e.c.

**859 OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING
OCCUPATIONS**

- 8590 Foremen: Product Fabricating, Assembling and Repairing Occupations, n.e.c.
- 8591 Jewellery and Silverware Fabricating, Assembling and Repairing Occupations
- 8592 Marine Craft Fabricating, Assembling and Repairing
- 8593 Paper Product Fabricating and Assembling Occupations
- 8595 Painting and Decorating Occupations, Except Construction
- 8596 Inspecting, Testing and Grading Occupations: Product Fabricating,
Assembling and Repairing, n.e.c.
- 8598 Occupations in Labouring and Other Elemental Work: Product Fabricating,
Assembling and Repairing, n.e.c.
- 8599 Other Product Fabricating, Assembling and Repairing Occupations, n.e.c.

MASTER TITLES AND DEFINITIONS

(See **CHARACTERISTICS OF THE CCDO** for explanation of master titles and definitions and their applications)

01-060 DESIGN ENGINEER(prof. & tech., n.e.c.)

Applies established engineering principles to the design and development of equipment, structures, processes and systems, by performing any combination of the following duties:

Analyzes proposal, product or equipment specifications, and process requirements to conceive a practical design. Determines feasibility from the standpoint of costs, space, time limitations, company plans, availability of standard equipment and other technical and economic factors. Consults with research engineers and scientists, or customer representatives to resolve design problems related to product styling and production planning. Provides technical information concerning construction and manufacturing techniques, material properties, and advantages and limitations affecting plant, product and long range planning. Compiles and analyzes operational data, and directs complex tests to establish standards for new designs or modifications to existing equipment, products or processes. Prepares related installation, operation and maintenance specifications and instructions. Supervises and co-ordinates the work of technologists and technicians who act in direct support of research activities.

01-070 ENGINEERING TECHNICIAN(prof. & tech., n.e.c.)

Carries out a limited number of technical functions in an engineering specialization; such as, chemical, civil, electrical, industrial, mechanical, metallurgical, mining, petroleum, aeronautical or nuclear engineering, primarily in relation to installation, operation and maintenance, quality control and production planning activities, using a basic knowledge of specific engineering, scientific, mathematical and drafting design principles and techniques, by performing any combination of the following duties:

Interprets work assignment instructions, selects and adapts standard procedures, techniques and equipment and establishes work sequence. Prepares, marks, measures or weighs test materials or samples, using various standard techniques and equipment. Estimates time, quantities of material, and labour required for such activities as testing, installation, maintenance, manufacture or construction. Incorporates design details into drawings following specifications for machinery, tools, or processes. Constructs, installs, maintains, repairs, calibrates and modifies standard equipment or systems according to standards, tests or instructions. Adapts and constructs auxiliary devices for tests, and operates standard equipment to test materials, samples and products. Makes calculations and prepares charts, graphs and supporting data for reports.

May assist other technical worker, or perform duties independently.

01-080 ENGINEERING TECHNOLOGIST(prof. & tech., n.e.c.)

Carries out a variety of technological functions in an engineering specialization; such as, chemical, civil, electrical, industrial, mechanical, metallurgical, mining, petroleum, aeronautical, or nuclear engineering, primarily in support of engineering research, development and design activities, using knowledge of engineering, scientific, mathematical and drafting design principles and practices, by performing any combination of the following duties:

Assists engineers and other technical workers in the research, design, and development of products, systems, processes and equipment by analyzing technical problems, co-ordinating the construction of working models, pilot plants and similar prototypes, and by developing and interpreting design specifications for complex equipment and processes. Represents engineers on work or test sites to ensure compliance with design specifications, study objectives and standards relating to production or quality control, and industrial or construction safety. Examines and evaluates assignments, defines problems, determines procedures to arrive at solutions, and schedules work. Obtains or prepares detailed estimates of time, quantities, labour, and material costs required for work in such areas as product

design, testing of construction, equipment installations, and manufacturing processes. Diagnoses complex equipment or process malfunctions, production or test problems; plans and carries out corrective action or directs other workers in rectifying problems. Conducts work studies and method analyses, and performs statistical calculations necessary for establishing work standards. Interprets and evaluates, at a level below that of the engineer, experimental, test, and other data and prepares reports and recommendations based on evaluations. Oversees and co-ordinates activities of technicians, skilled craftsmen and other workers engaged in various aspects of technical assignments. Assists in the training of less experienced technical workers.

May in some situations work independently of engineers and other technical workers.

01-090 GENERAL MANAGER(prof. & tech., n.e.c.)

Plans, organizes, directs and controls the major functions of an industrial, commercial, governmental, or other establishment through departmental managers and other subordinate executives, and within powers delegated by a directorate, governing body, or official decree, by performing any combination of the following duties:

Establishes organization objectives, formulates and approves policies and programs and sets standards by using knowledge of organization's capacities; analyzing economic, social, technical, legal and other trends; consulting with subordinate managers and executives; and reviewing staff recommendations and reports. Authorizes establishment of major departments and key executive positions, and funds to implement departmental policies and programs. Selects or approves selection of departmental managers and senior staff, delegates authority and approves overall personnel program. Directs, motivates and develops skills of executive and managerial personnel to foster productivity, growth and high morale, exercising leadership ability and using knowledge of management science. Co-ordinates activities of departments or other functional units by utilizing staff conferences, schedule boards, flow charts and other devices, and by developing effective lines of communication. Provides for administration controls, such as reports, audits and inspections. Maintains awareness of developments affecting objectives and policies, and takes initiative in effecting remedial action or needed adjustments, in consultation with executives concerned. Assumes responsibility for products or services of establishment. Represents organization, or delegates representatives in negotiations, at conventions, seminars and other official occasions. Entertains officials, develops liaison with other organizations and frequently sits on charitable, educational or other civic committees, to promote good public relations.

General managers are designated according to the industry in which they work, and frequently, as senior officials, hold appointments, such as, President, Vice-President or Chairman of the Board or other governing body.

01-140 LIFE SCIENCES TECHNICIAN(prof. & tech., n.e.c.)

Carries out a limited number of technical functions in a life sciences specialization; such as, botany, zoology, forestry, horticulture, agriculture or medicine, primarily in relation to biological testing and analysis activities, using a basic knowledge of specific scientific and mathematical principles, and laboratory techniques, by performing any combination of the following duties:

Interprets work assignment instructions, selects and adapts standard procedures, techniques and equipment and establishes work sequence. Takes, prepares, marks, measures or weighs biological specimens, using various standard techniques and equipment. Sets up laboratory, medical and other scientific equipment for experiments, tests, and analyses, and adjusts or aligns equipment as required. Conducts experiments, tests and analyses, and records and organizes

observations and conclusions. Makes calculations and prepares charts, graphs and other supporting data for reports. May assist other technical workers, or perform duties independently.

01-150 LIFE SCIENCES TECHNOLOGIST(prof. & tech., n.e.c.)

Carries out a variety of technological functions in a life sciences specialization; such as, botany, zoology, forestry, horticulture, agriculture or medicine, primarily in support of biological research, testing and analytical activities, using knowledge of scientific and mathematical principles and laboratory practices, by performing any combination of the following duties:

Assists life scientists and other technical workers in design and development of research methods and equipment. Searches reference publications and makes recommendations concerning technical problems. Performs pre-test experiments and analyses, develops design specifications for, and constructs or oversees the construction of special test equipment. Obtains or prepares estimates of time, and costs of quantities of material and equipment for tests, analyses, experiments or other research activities; plans and schedules work. Sets up scientific equipment for experiments, tests and analyses, and calibrates precision equipment as required. Performs quality control tests to ensure reagents and equipment are functioning as specified. Conducts experiments, tests and analyses, requiring a high degree of skill and judgment, and involving a large number of operations with many possible sources of error. Modifies and adapts procedures and equipment as required. Interprets and evaluates test and other data at a level below that of the life scientist; prepares reports and recommendations based on evaluations, and frequently assists life scientists in preparing material for publications. May in some instances work independently of life scientists and other technical workers.

01-170 MANAGER(prof. & tech., n.e.c.)

Plans, organizes, directs and controls the activities of a department, division, program, regional office or other unit of an industrial, commercial, governmental or other establishment, through subordinates who are at a supervisory level or above and within policies laid down by senior management, by performing any combination of the following duties:

Establishes procedures to implement policies and directives of senior management, and recommends changes in policies to achieve assigned objectives, based on detailed knowledge of the unit's performance capabilities. Prepares and submits financial estimates for approval. Determines organizational structures in his unit, and defines subordinate managerial and supervisory functions. Selects or approves appointment of subordinate staff, and directs their training to ensure efficient usage of personnel and material. Co-ordinates activities within assigned areas and with other departments or units by conferring with other managers or subordinates and utilizing schedule boards, flow charts and similar devices. Reviews effectiveness of assigned operations, enforces regulations, prepares reports, and advises senior management of trends in own operations which may be significant for other units of the organization. Assumes responsibility for operations of his unit. Assists staff with important and difficult administrative or technical problems. Negotiates with specialists, technical consultants and external organizations on matters such as business services and union contracts. Represents organization on boards or committees as a delegated specialist, or in a public relations capacity.

Managers are usually designated according to assigned responsibility in the department or other unit of the organization.

01-180 MANAGING SUPERVISOR(any ind.)

Plans, organizes, directs and controls the operations of an establishment engaged in retail or wholesale trade, or in providing services to the public, to business or other organizations, on own or owner's behalf or in partnership, and supervises and co-ordinates activities of subordinate workers, by performing any combination of the following duties:

Estimates consumer demands, and determines or recommends types and quantities of merchandise or services to be sold, and price and credit policies to be implemented. Defines operating procedures. Plans budget, prepares or supervises preparation of purchase orders for stock and supplies, and authorizes or obtains authorization for expenditures. Establishes layout of premises. Determines staff functions and numbers and hires or arranges for hiring of staff. Assigns duties, sets salaries, and initiates personnel action such as

promotions and discharges. Supervises and trains workers, or oversees supervision and training. Co-ordinates activities of workers to ensure efficient operations. Counts and deposits money received, or supervises handling of money, takes or verifies inventories, and keeps accounts and other records. Ensures that safety, health and security regulations are followed. Promotes the sale of establishment goods or services, and approves advertising and display work. Receives and acts on customer complaints. Confers with workers or their representatives to resolve grievances and other employee problems.

When operating a small establishment, performs some or all of the duties of the workers. When operating an establishment on own behalf or in partnership, is commonly known as a WORKING PROPRIETOR. See term title definition, 02-450 WORKING PROPRIETOR, for method of classification. Managing supervisors, including working proprietors are designated according to merchandise or services offered for sale, or type of establishment operated.

01-210 PHYSICAL SCIENCES TECHNICIAN(prof. & tech., n.e.c.)

Carries out a limited number of technical functions in a physical sciences specialization; such as, physics, chemistry, geology, geophysics, meteorology or astronomy, normally in relation to operation and maintenance, and quality control activities, using a basic knowledge of specific scientific and mathematical principles, and laboratory techniques, by performing any combination of the following duties:

Interprets work assignment instructions, selects and adapts standard procedures, techniques and equipment, and establishes work sequence. Prepares, marks, measures or weighs test materials or samples, using various standard techniques and equipment. Sets up laboratory and other scientific equipment for experiments, tests, and analyses and adjusts or aligns equipment as required. Conducts experiments, tests and analyses and records and organizes observations and conclusions. Makes calculations and prepares charts, graphs and other supporting data for reports.

May assist other technical workers, or perform duties independently.

01-220 PHYSICAL SCIENCES TECHNOLOGIST(prof. & tech., n.e.c.)

Carries out a variety of technological functions in a physical sciences specialization; such as, physics, chemistry, geology, geophysics, meteorology, or astronomy, primarily in support of research activities, using knowledge of scientific and mathematical principles and laboratory practices, by performing any combination of the following duties:

Assists physical scientists and other technical workers in design and development of research methods and equipment, by searching reference publications, making recommendations concerning technical problems, performing pre-test experiments and analyses, and by developing design specifications for, and constructing or overseeing the construction of, special test equipment. Obtains or prepares estimates of time and costs, of quantities of material and equipment for tests, analyses, experiments or other research activities. Plans and schedules work. Sets up scientific equipment for experiments, tests and analyses, and calibrates precision equipment as required. Conducts experiments, tests and analyses, requiring a high degree of skill and judgment, and involving a large number of operations with many possible sources of error. Modifies and adapts procedures and equipment as required. Interprets and evaluates experimental, test and other data at a level below that of the physical scientist; prepares reports and recommendations based on evaluations, and frequently assists physical scientists in preparing material for publications. May in some situations work independently of physical scientists and other technical workers.

01-230 SALESMAN(ret. trade; whole. trade)

Sells merchandise to individuals from sales floor and at customer's home or place of business, applying knowledge of characteristics, quality and merit of items sold, by performing any combination of the following duties:

Talks to customer on sales floor or elsewhere to ascertain his wants, and follows up initial contact, by phone or in person, to solicit business. Displays merchandise, shows descriptive material and demonstrates article, emphasizing saleable features. Advises customer on care and use of article. Estimates or quotes prices, credit terms, trade-in allowances and delivery date. Prepares sales slip or sales

MASTER TITLES AND DEFINITIONS

01-240—01-250

contract. Receives payment or obtains credit authorization. Prepares reports of business transactions and keeps expense accounts. Sets up displays of merchandise in window or on sales floor. Prepares inventory of stock, and requisitions merchandise from stockroom or warehouse.

Salesmen are usually designated according to product sold.

01-240 SALESPERSON(ret. trade; whole. trade)

Sells merchandise to individuals from sales floor, applying knowledge of characteristics, quality and merit of items sold, by performing any combination of the following duties:

Ascertains make, type and quality of merchandise desired by customer. Displays merchandise or demonstrates article, emphasizing saleable features, and suggests selection to customer. Advises customer on use and care of article. Estimates or quotes prices, credit terms, trade-in allowances and delivery dates. Prepares sales slip or sales contract. Receives payment or obtains credit authorization. Wraps or packages merchandise for customer. Sets up displays of merchandise in windows or on sales floor. Prepares inventory of stock and requisitions merchandise from stockroom or warehouse.

Salespersons are usually designated according to product sold.

01-250 SUPERVISOR/FOREMAN(any ind.)

Supervises and co-ordinates activities of workers engaged in one or more occupations, by performing any combination of the following duties:

Studies assignments, determines manpower requirements, and estimates materials and supplies needed for completion of work.

Establishes methods to meet work schedules, using knowledge of capacities of workers, machines and equipment. Requisitions materials and supplies as indicated. Hires and assigns duties to workers, recommends or initiates personnel actions, such as promotions, transfers, discharges, and disciplinary measures, and maintains personnel and attendance records. Trains or arranges for the training of workers and explains company policies. Sets up machines and equipment and interprets work orders, specifications or technical drawings. Initiates or suggests plans to motivate workers to achieve goals. Co-ordinates activities of own workers and confers with other supervisors, foremen and/or superiors to avoid conflicts with other units or departments. Ensures that quality of work meets standards, inspects materials received, and enforces safety regulations. Analyzes and resolves work problems. Prepares and submits production, progress or other reports. Recommends measures to improve work methods, equipment performance, quality of product or service, and working conditions. Confers with workers or their representatives to resolve complaints and grievances.

When supervising workers engaged in one occupation, is usually required to be adept in activities under supervision. When supervising workers engaged in several occupations, is required to possess general knowledge of activities involved. Supervisors and/or foremen are designated according to type of work supervised, process involved, craft of workers supervised, product manufactured or industry in which work occurs. A working supervisor and/or foreman, commonly known as a **GROUP LEADER**, or **LEAD HAND**, who primarily performs the same duties as the workers supervised, is identified by the same occupational title as the workers.

TERM TITLES AND DEFINITIONS

(See **CHARACTERISTICS OF THE CCDO** for explanation of term titles and definitions and their applications)

02-010 APPRENTICE(any ind.)

A term used to describe a worker who is bound by contractual agreement to serve an employer for a specified period of time, with a view to learning a craft or trade in which the employer is obligated to instruct him:

In general, the contract sets out the minimum number of hours of training required to complete the apprenticeship and outlines wage increases throughout the program on the basis of a graduated minimum scale. An apprentice follows a program of on-the-job, and related classroom and shop training lasting about one to four years and leading to a prescribed level of competence in an occupation. Apprenticeship programs are usually under the guidance of an advisory committee representing management, labour and government. Entry age and educational levels, health standards and training requirements vary with the apprenticed occupation and frequently are specified by provincial legislation. An apprentice is usually between the ages of sixteen and twenty-five. In some provinces, an older worker with background experience in a trade may be accepted as a 'mature apprentice'. Credit may be given for previous related experience or training. Normally, the successful completion of eight to twelve years schooling is required before commencing apprenticeship. An examination on all phases of training usually terminates the program, and successful completion results in the receipt of a certificate of apprenticeship. Workers who complete an apprenticeship program may be required to obtain licenses or pass certification examinations before being permitted to practise their trade.

Apprentices are classified with the occupations for which they are being trained, but they are not identified by separate occupational titles or definitions as apprentices.

02-040 ASSISTANT(any ind.)

A term used to describe a worker who directly assists one or more workers at the professional and managerial levels, by performing essentially DATA- and PEOPLE- related functions that are clearly subordinate to those of the worker assisted, but which frequently require formal training in the assistant specialization:

Excluded are the following who should be designated and classified as indicated: A worker who performs duties closely related to those of the worker assisted and who on occasion may assume the authority and responsibilities of the worker assisted should be assigned the same title and classification as the worker assisted. A worker who has been designated as an assistant by an establishment because his work fulfils an operational support function, but who does not directly assist other workers, should be assigned a title more indicative of the work performed and classified accordingly. A worker who directly assists a professional such as one engaged in a scientific, engineering, mathematical or drafting design field by performing essentially DATA-AND THINGS- related functions may be designated and classified as a **TECHNICIAN** or **TECHNOLOGIST**

A worker who performs routine, primarily manual duties in direct support of a more competent processing, manufacturing, construction or primary industry worker may be designated and classified as a **HELPER**. See term title definition 02-160 **HELPER**.

02-070 CHIEF ENGINEER(prof. & tech., n.e.c.)

A term used to describe an engineer who uses the principles and methods of management to supervise and co-ordinate the technical or administrative activities of other engineers, technologists, technicians and tradesmen:

The workers supervised are concerned with such activities as research, design, development, evaluation, manufacture and repair of machinery, components, tools and equipment; and with related methods, procedures and processes in governmental, industrial and business establishments.

Chief engineers are usually classified in the same unit group as the engineers they supervise.

02-090 CONSULTANT(prof. & tech., n.e.c.)

A term applied to a worker who utilizes expertise and knowledge of a specialized field of activity to evaluate and recommend improvements in the practice of that specialization in a commercial, industrial, governmental or other organization, by performing any combination of the following duties:

Analyzes objectives, policies, methods and procedures relating to specializations; such as, product administration, labour relations, public relations and safety standards. Devises tests, prepares flow charts, conducts interviews and examines records and other data to determine degree to which objectives are being achieved. Prepares reports and recommendations for modification and changes in policies, methods and procedures to improve efficiency. Assists with implementation of recommendations by such means as revising procedures, and preparing and conducting retraining sessions.

Consultants are designated according to title of specialization, such as, **ENGINEERING CONSULTANT**, **PERSONNEL MANAGEMENT CONSULTANT**, and **EDUCATIONAL SPECIALIST**. These occupations are classified in the unit group with the worker, in the same field of specialization, who performs functions of a non-consulting nature, or, when such a unit group does not exist, in Unit Group 1179 - **OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION, N.E.C.**

02-130 ENGINEER(prof. & tech., n.e.c.)

A term used to describe a worker who plans, designs and develops equipment, machines, products, systems and processes, using scientific and engineering principles, to serve human needs and desires:

Engineers must possess qualifications acquired through formal training and work experience which normally lead to legal certification by appropriate licensing authorities. Engineers are classified according to the discipline in which the individual is most active, such as, aeronautical, agricultural, electrical, electronic, chemical, civil, mechanical, metallurgical, mining, marine and structural engineering. Engineers primarily engaged in managerial, teaching or sales activities are classified in the appropriate Major Group according to work performed.

02-150 GRADER(any ind.)

A term used to describe a worker who classifies and sorts materials and products according to established quality-control standards:

Examines materials and products by sight, touch, taste or smell, or by the use of scales or gauges, and grades them according to such standards as weight, size, colour or general condition. Grades foodstuffs such as grains, fruits, vegetables, meat, eggs and cheese. Grades other products such as tobacco, lumber, diamonds, leather and fur.

Graders are usually designated according to the product graded, and are normally classified in unit groups for **INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS**.

02-160 HELPER(any ind.)

A term used to describe a worker who supports another worker of a higher level of expertise in an occupation, by performing a combination of more routine, essentially manual duties, such as the following:

Conveys and holds materials and tools for worker aided, and uses hand or power tools or appliances in a helping capacity. Transports materials, tools, and supplies to and from worksite, using wheelbarrows, hand trucks, hoists, powered equipment and similar

devices. Prepares surfaces and mixes materials for the use of the worker aided, and cleans, mounts, places, or assembles parts or objects. Performs routine tasks related to installation, set-up, maintenance or dismantling of machines and equipment. Tends or feeds machines and equipment, offbears materials or parts and performs operating adjustments as directed. Takes samples for analysis, keeps work records, or performs other related tasks.

A worker who can perform his work independently of another worker is not a HELPER, and is designated and classified according to the work performed. HELPERS are classified in the appropriate unit group according to work performed.

02-170 INSPECTOR(any ind.)

A term used to describe a worker who critically examines any of a variety of goods, services or operations for conformity to established quality, health, safety, legal, business, ethical or other standards, by performing any combination of the following duties:

Examines raw materials for quality, and manufactured items for defects and for conformance to specifications, visually and using sample models and instruments; such as, scales, gauges, templates, calipers and micrometers. Verifies that established standards are maintained relative to such matters as food-growing, processing and marketing; product-packaging; storage and transportation methods; buildings and facilities; and business practices, operations and services. Affixes seals or tags to approved items, issues or revokes licences and permits or ascertains that licences and permits have been obtained and are displayed. Confers with officials, interprets regulations and codes, and assists establishments in altering methods and practices to meet established standards. Investigates complaints and violations, prepares reports of findings and action taken or recommended, files charges and testifies in court. Recommends changes in standards, administrative procedures, facilities, methods and practices.

Inspectors are normally identified according to product, item or service inspected. Typical titles are: PAPER INSPECTOR (pulp & paper); WELD INSPECTOR (mach., weld. & forg.). Inspectors in the fields of processing, machining, fabricating and assembling materials, goods or products are classified in unit groups for INSPECTING, TESTING, GRADING, AND SAMPLING OCCUPATIONS. Inspectors and Regulatory Officers concerned with enforcing and advising on governmental health, safety or other regulations are classified in Unit Group 1116, INSPECTORS AND REGULATORY OFFICERS, GOVERNMENT. Inspectors and Regulatory Officers concerned with enforcing and advising on adherence to non-governmental standards and regulations in such areas as quality of service, and observance of company business policies and procedures, are classified in Unit Group 1176, INSPECTORS AND REGULATORY OFFICERS, NON-GOVERNMENT.

02-180 INTERN(medical)

A term used to describe a person who performs medical duties for a specified length of time in hospitals, approved for internship, to gain training and practical experience immediately following graduation from medical school, and to meet licensing requirements for the practice of medicine.

Interns are classified in Unit Group 3111, PHYSICIANS AND SURGEONS.

02-190 LABOURER/ELEMENTAL WORKER(any ind.)

A term used to describe a worker who performs one or more uncomplicated tasks, usually physical in nature, involving such functions as feeding-offbearing and handling materials and objects, which may require the use of simple tools or equipment:

In the performance of his duties may be required to speak to, signal or serve other persons and carry out simple data-related functions such as copying and comparing. Applies common sense understanding to carry out tasks in standardized situations with occasional or no variables in or from these situations. Normally, these tasks require only simple demonstration, instruction or explanation in preparation for average performance on the job, though in some instances training may last a few days.

Many occupations that are classified in unit groups entitled, 'OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK' are not designated by the title LABOURER, but by titles which are more descriptive of the work performed, such as, PACKAGER, HAND (any ind.) and MOULD FILLER (plastic prod.; rubber). Workers designated as LABOURERS or ELEMENTAL WORKERS, who perform a combination of

uncomplicated tasks, such as those of a LABOURER, GENERAL, may be required to carry out tasks involving a few concrete variables in standardized situations.

02-240 MANUFACTURER'S SERVICE REPRESENTATIVE(any ind.)

A term used to describe a worker who utilizes a knowledge of mechanical, hydraulic and electrical principles and the manufacturer's specifications, to provide service in the installation, operation and repair of equipment in customer's establishment, by performing any combination of the following or similar duties:

Consults with staff in manufacturer's engineering department to resolve problems of machine design, and to avoid construction and installation problems in customer's establishment. Studies drawings or blueprints to familiarize himself with equipment operation. Oversees installation of equipment in customer's establishment. Operates machine through trial runs to ensure that quality and rate of production meet specifications. Trains customer's personnel in operating, adjusting, maintaining and repairing equipment. Consults with customer about deviation of equipment operation from original specifications, and explains reasons for changes. Repairs or supervises repair of worn or defective equipment in customer's establishment.

Manufacturer's service representatives are classified in unit groups which reflect the nature of service provided and type of equipment serviced.

02-280 NOTARY PUBLIC(prof. & tech., n.e.c.)

A term used to describe a worker who performs any combination of the following legal-service duties as prescribed by a commission issued by provincial government:

Witnesses, certifies and attests the validity of signatures on documents. Takes and certifies acknowledgement or proof of powers of attorney, mortgages, deeds, and other legal documents. Takes depositions and affidavits for use before court, judge or officer within jurisdiction. Administers oaths and affirmations. Keeps permanent records of official acts.

Workers whose regular duties include those described above are classified in Unit Group 2343 - LAWYERS AND NOTARIES. Workers who perform duties of the term title, 02-280 NOTARY PUBLIC (prof. & tech., n.e.c.), in addition to the duties of another occupation, are classified according to their principal occupation.

02-310 RESEARCH ENGINEER(prof. & tech., n.e.c.)

A term used to describe an engineer who, in co-operation with scientists and other engineers, engages in basic and applied research activities, directed toward the investigation, evaluation and application of engineering and scientific theories and principles to practical problems:

Conducts studies in areas, such as, pre-stressed concrete construction, high-pressure instrumentation, supersonic flight, operation of continuous chemical processes at high and low pressures and temperatures, radar, colour television and electronic computation and control. Consults with other engineers and scientists regarding the development and improvement of new or existing products, services or production processes. Follows the studies from inception, through the drafting phase, to the production of the prototype or model and the preparation of technical reports. Supervises and co-ordinates the work of technologists and technicians who act in direct support of his research activities.

Research engineers are classified in the appropriate engineering unit group according to work performed.

02-320 RESIDENT PHYSICIAN OR SURGEON(medical)

A term used to describe a physician or surgeon who performs medical duties for a specified length of time, following graduation from medical school and internship, in a hospital approved for residency requirements to gain advanced graduate education and practical experience in a particular branch of medicine or surgery, or in family medicine, as a requirement for certification as a specialist.

Resident physicians or surgeons are classified in Unit Group 3111, PHYSICIANS AND SURGEONS.

02-330 SAMPLER(any ind.)

A term used to describe a worker who collects samples of raw or processed materials for laboratory analysis and quality-control purposes, performing duties such as the following:

Collects samples by dipping, scooping, pouring or cutting. Marks samples with identifying information and sends them to laboratory. Weighs, pulverizes, screens and/or blends materials from various collection points to provide representative samples.

Samplers are normally designated according to the material sampled, and are classified in unit groups for INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS.

02-350 SCIENTIST(prof. & tech., n.e.c.)

A term used to describe a worker who conducts investigations or enquiries to acquire a theoretical, abstract or practical knowledge of physical and natural phenomena:

States problems and frames questions which are capable of yielding significant facts, theories, laws and concepts, and tests hypotheses through observation, investigation or experimentation.

Scientists are classified according to the discipline in which the individual is most active; such as, chemistry, physics, geology, meteorology, geography, metallurgy, agriculture, zoology, botany and pharmacology.

02-380 SQUAD MAN(any ind.)

A term used to describe a worker who is trained, in all phases of manufacturing within a specific industry, through a company- oriented training program to identify and develop supervisory and executive talent in individuals:

Substitutes for absentees, as needed, to keep departments fully-manned in emergencies. Conducts assigned studies, in areas of specialized training, for production problem identification, analysis, documentation and preparation of reports. Investigates and studies alternate methods and procedures and, upon approval, institutes and conducts programs to modify existing production procedures. Participates as a member of a team of specialists to inaugurate production with new installations.

Squad men are normally designated by the industry in which they work, and are classified in the appropriate supervisor/foreman or managerial unit group according to work performed.

02-410 TECHNICIAN(prof. & tech., n.e.c.)

A term used to describe a worker who performs a limited number of technical functions in a physical science, life science or engineering specialization, primarily in relation to installation, operation and maintenance, quality control, production planning or biological testing and analysis activities, using a basic knowledge of specific scientific, mathematical or engineering and drafting design principles and practices:

Interprets work-order assignments, selects and adapts standard procedures, techniques and equipment and establishes work sequence.

Takes, prepares, marks, measures or weighs test materials, or samples, using a variety of techniques and equipment. Sets up scientific equipment and conducts experiments, tests and analyses, or constructs, installs, maintains, repairs, calibrates or modifies industrial or other equipment. Makes calculations and prepares charts, graphs and other supporting data for reports.

May assist other technical workers or perform duties independently.

Reference should be made to the following unit groups for classification possibilities of technologists and technicians: 2117, PHYSICAL SCIENCES TECHNOLOGISTS AND TECHNICIANS; 2135, LIFE SCIENCES TECHNOLOGISTS AND TECHNICIANS; 3156, MEDICAL LABORATORY TECHNOLOGISTS AND TECHNICIANS; 3155, RADIOLOGICAL TECHNOLOGISTS AND TECHNICIANS; 3157, DENTAL HYGIENISTS, ASSISTANTS AND TECHNICIANS; 2165, ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS; 2353, TECHNICIANS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES. Other technicians are classified in the same unit group as the worker assisted, or according to work performed. Workers who directly assist another or other workers at the professional and managerial levels are designated as ASSISTANTS provided that they perform essentially DATA- and PEOPLE- related functions. Assistants usually require formal training in the occupational specialization and their functions are clearly subordinate to those of the worker assisted. Those workers who perform inspecting and testing functions at levels of complexity higher or lower than those

specified for technologists and technicians may be classified in unit groups for scientific and engineering, or inspecting and testing occupations respectively.

02-420 TECHNOLOGIST(prof. & tech., n.e.c.)

A term used to describe a worker who performs a variety of technological functions in a physical science, life science or engineering specialization, primarily in support of research, developmental and design activities, using knowledge of scientific, mathematical or engineering and drafting design principles and practices:

Assists scientists, engineers and other technical workers in developing research methods and equipment, and designing and developing products, systems, processes and industrial equipment. Obtains or prepares estimates of time and material cost for research tests, analyses and experiments or for work projects or processes. Sets up scientific equipment and conducts experiments, tests and analyses. Diagnoses complex equipment or process malfunctions, and production or test problems, and carries out corrective action. Interprets and evaluates, at a level below that of the engineer or scientist, test and other data, and prepares reports and recommendations based on findings.

May in some situations work independently of engineers and scientists.

Reference should be made to the following unit groups for classification possibilities of technologists and technicians: 2117, PHYSICAL SCIENCES TECHNOLOGISTS AND TECHNICIANS; 2135, LIFE SCIENCES TECHNOLOGISTS AND TECHNICIANS; 3155, RADIOLOGICAL TECHNOLOGISTS AND TECHNICIANS; 2165, ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS. Other technologists are classified in the same unit group as the worker assisted, on according to work performed.

Workers who directly assist one or more workers at the professional and managerial levels are designated as ASSISTANTS provided that they perform essentially DATA- and PEOPLE- related functions. Assistants usually require formal training in the occupational specialization and their functions are clearly subordinate to those of the worker assisted. Those workers who perform inspecting and testing functions at levels of complexity higher or lower than those specified for technologists and technicians may be classified in unit groups for scientific and engineering, or inspecting and testing occupations respectively.

02-430 TESTER(any ind.)

A term used to describe a worker who conducts routine tests on materials, components, machines or equipment to determine physical or chemical characteristics, or to verify conformity to specifications or functional standards, by performing any combination of the following duties in a laboratory or at a test bench:

Takes, prepares, marks, measures or weighs various samples, prior to conducting tests. Tests materials to determine physical or chemical characteristics, using laboratory test equipment. Tests electric or electronic components and equipment to verify conformity to specifications, using various electric or electronic testing equipment. Operates machines or equipment to test performance, and makes routine adjustments as required. Records test results. Marks approval on acceptable units, and returns defective units for re- working.

Testers are normally identified according to material or unit tested. Typical titles are: PULP TESTER (pulp & paper); SPRING TESTER (mach., weld. & forg.; metal fab., n.e.c.). Testers in the fields of processing, machining, fabricating and assembling materials, goods or products are normally classified in unit groups for INSPECTING, TESTING, GRADING, AND SAMPLING OCCUPATIONS. These workers who perform a number of technical functions including testing at levels of complexity higher than that specified for testers may be classified in unit groups for scientific and engineering, or technologist and technician occupations.

02-450 WORKING PROPRIETOR(any ind.)

A term used to describe a worker who operates an establishment, on own behalf or in partnership:

Performs duties as described under the master titles, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.); 01-170 MANAGER (prof. & tech., n.e.c.) or 01-180 MANAGING SUPERVISOR (any ind.), depending upon size and complexity of organization operated.

TERM TITLES AND DEFINITIONS

02-450

When operating a small establishment, performs some or all of the duties of the workers.

Working proprietors are normally designated according to merchandise or services offered for sale, type of establishment or business operated, or professional, technical, craft or service function exercised. Working proprietors in sales and services who perform duties as described under the master title, 01-180 MANAGING SUPERVISOR (any ind.) are classified in the supervisor unit groups in Major Group 51, Sales Occupations and 61, Service Occupations,

respectively. Working proprietors in sales and services who perform duties as described under the master titles, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.) and 01-170 MANAGER (prof. & tech., n.e.c.) are classified in Major Group 11, MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS. Working proprietors found outside of Major Group 51, 61 and 11, are classified in the appropriate supervisory unit group of an appropriate minor group, or in the workers' unit group, if a supervisory unit group does not exist.

MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS

This major group includes occupations concerned with managerial and administrative activities such as: planning, organizing, co-ordinating, directing, controlling, staffing; and formulating, implementing or enforcing policy in government, industry and other organizations. Middle-management occupations, managers of chains of establishments, and occupations closely related to management and administration are included in this major group. Excluded from this major group are the following: working proprietors and managing supervisors of wholesale and retail businesses, classified in Major Group 51, SALES OCCUPATIONS; working proprietors and managing supervisors of catering and lodging establishments, classified in Major Group 61, SERVICE OCCUPATIONS; police chiefs, fire chiefs, and other supervisory workers in the protective services, classified with the workers they supervise in Minor Group 611, PROTECTIVE SERVICE OCCUPATIONS; farm managers and farmers classified in Major Group 71, FARMING, HORTICULTURAL AND ANIMAL HUSBANDRY OCCUPATIONS; supervisors and foremen, classified in other appropriate major, minor and unit groups. MANAGERIAL, ADMINISTRATIVE AND RELATED OCCUPATIONS are classified in the following minor groups:

- 111 Officials and Administrators Unique to Government
- 113/114 Other Managers and Administrators
- 117 Occupations Related to Management and Administration

111-OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT

This minor group includes occupations, unique to government, concerned with developing laws, rules, and regulations for society; carrying out senior-and middle-managerial activities in government agencies and departments; enforcing laws, rules, and regulations within governmental jurisdiction; and administering a wide variety of other activities unique to government. Managerial and administrative occupations which are common to both government and other organizations, including autonomous crown corporations, are classified in Minor Group 113/114, OTHER MANAGERS AND ADMINISTRATORS. OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT are classified in the following unit groups:

- 1111 Members of Legislative Bodies
- 1113 Government Administrators
- 1115 Postmasters
- 1116 Inspectors and Regulatory Officers,
Government
- 1119 Officials and Administrators Unique to Government, n.e.c.

1111-MEMBERS OF LEGISLATIVE BODIES

This unit group includes occupations concerned with developing laws, rules and regulations for society. Activities include: participating in, or exercising the executive power of, legislative bodies of federal, provincial, territorial or local governments, working within the constitutional framework which specifies their authority and areas of jurisdiction.

1111-110 LEGISLATIVE MEMBER(gov. serv.)

Participates in the activities of a federal, provincial, territorial or local government legislative body as an elected or appointed member: Takes part in formulating, amending or opposing government policy, and in making, amending or repealing laws, ordinances and official regulations. Serves on government administrative boards, commissions of inquiry and committees dealing with finance, health, welfare, defence, education, employment or other matters. Investigates matters of concern to general public, or to particular persons or sections in constituency, and introduces proposals for

remedial government action, or otherwise endeavours to serve public interests.

May preside over meetings of legislative body. May nominate or participate in confirming appointments of heads of government departments and other high-level officials. May represent government legislative body at intergovernmental meetings. May be designated according to post held or function performed within particular level of government; for example,

Leader of Opposition
Member of Parliament
Senator
Speaker
Member of Legislative Assembly
Member of National Assembly
Member of Provincial Parliament
Member of Territorial Council

1111-114 LEGISLATIVE EXECUTIVE(gov. serv.)

Participates in the activities of a federal, provincial, territorial or local government as an elected or appointed member of a legislative body and its executive council:

Performs duties of 1111-110 LEGISLATIVE MEMBER (gov. serv.), and in addition, takes part in formulating executive council policy and in making, amending or repealing laws, ordinances and official regulations. Serves as political head of government department. Directs high-level administrators in the implementation of government policy. Represents government at intergovernmental meetings.

May preside over and direct policy deliberations of political heads of government departments. May be designated according to post held or function performed within particular level of government; for example,

Prime Minister
Premier
Minister
Territorial Commissioner

1111-118 MAYOR(gov. serv.) reeve; warden.

Presides over and takes part in the activities of a local government administrative council, as an elected member:

Ensures that laws for the government of municipality are duly executed and obeyed. Oversees conduct of all subordinate officers in municipal government, and, as far as practical, ensures that all cases of negligence, carelessness and violation of duty are prosecuted. Communicates to the council such information, and recommends to it such measures, as may tend to improve finances, health, security, cleanliness, comfort and ornament of municipality.

May preside over and take part in administrative council of a regional or metropolitan unit of local government and be designated accordingly; for example,

Chairman of Metropolitan Council
Chairman of Regional Municipality

1113-GOVERNMENT ADMINISTRATORS

This unit group includes occupations, unique to government, concerned with carrying out senior middle managerial and administrative activities, as described under the master titles, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.) and 01-170 MANAGER (prof. & tech., n.e.c.), with responsibilities for implementing government policy in areas of jurisdiction, such as health, education, finance or labour legislation, and administration of justice. Judges and magistrates are classified in Unit Group 2341, JUDGES AND MAGISTRATES. Occupations unique to government whose duties are not similar to those described in the above-mentioned master title definitions are classified in Unit Group 1119, OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT, N.E.C.

1113-110 EXECUTIVE ADMINISTRATOR, GOVERNMENT AGENCIES(gov. serv.) DPT:018 GED: 5 SVP: 9 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through subordinate senior administrators, the activities of a board, agency, crown corporation, authority, association, commission or council:

Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), specializing in administering a particular governmental agency dealing with matters such as: atomic energy, assets disposal, canals and waterways, war veterans allowance, and unemployment insurance. Appears before legislative bodies to furnish information on administrative matters or to propose changes in legislation or mandate.

May be designated according to function performed in organization; for example,

Chairman
Commissioner
Executive Director
General Manager
National Director
President
Vice-President

1113-114 EXECUTIVE ADMINISTRATOR, GOVERNMENT DEPARTMENT(gov. serv.) DPT:018 GED: 5 SVP: 9 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through subordinate senior administrators, the activities of a national, provincial, territorial or local government department:

Performs duties as described under master title 01-090, GENERAL MANAGER (prof. & tech., n.e.c.), specializing in administering a particular government department dealing with matters; such as, national defence, labour, education, justice, penal institutions, health, welfare, consumer affairs, public works, employment, immigration and foreign relations. Advises political or administrative head of department on policy questions, and refers major policy matters to him for final decision. Consults with other administrators on matters of mutual concern. Interprets government policy directives within terms of reference. Issues directives and ensures implementation by subordinate administrators.

May be designated according to position held in organization; for example,

Assistant-Deputy Minister
Associate Under-Secretary of State
Chief Electoral Officer
City Manager
Deputy Commissioner
Deputy Minister
Deputy Provincial Secretary
Director General
Dominion Statistician
Under-Secretary of State

1113-118 SENIOR ADMINISTRATOR, GOVERNMENT AGENCIES(gov. serv.) DPT:018 GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate administrators, the activities of a branch or service of a board, crown corporation, authority, association, commission or council:

Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), specializing in administering a particular government branch or service dealing with matters, such as international marketing of wheat and grains, and housing management. Consults with and advises superiors on policy questions, programmes and administrative problems. Interprets and implements managerial directives within terms of reference.

May be designated according to position held in organization; for example,

Assistant-Branch Manager
Audit Director
Branch Manager

1113-122 SENIOR ADMINISTRATOR, GOVERNMENT
DEPARTMENT(gov. serv.) DPT:018
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through subordinate administrators, the activities of a national, provincial, territorial or local government branch, service or departmental unit:

Performs duties as described under the master title, 01-090 **GENERAL MANAGER** (prof. & tech., n.e.c.), specializing in administering the administrative, professional or technical aspects of a branch or service within terms of reference. Issues instructions and ensures implementation by subordinate officials. Directs unit dealing with matters; such as, tax assessments, social security and pensions, wildlife and resources conservation, foreign aid, and collection of customs and excise duties. Acts as executive secretary for departmental head or official committees. Consults and advises departmental head on policy questions, programs and administrative problems.

May be designated according to position held in organization; for example,

Ambassador
 Branch Director
 Commissioner of Police
 Co-ordinator, Civil Emergency Measures
 Director, Parks Administration
 Fire Marshal
 Inspector-General of Banks
 Regional Director
 Superintendent

1113-126 ADMINISTRATOR, GOVERNMENT
AGENCIES(gov. serv.) DPT:118
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate administrators and supervisors, the activities of a section, unit or project of a government agency:

Performs duties as described under the master title, 01-170 **MANAGER** (prof. & tech., n.e.c.), specializing in administering a government branch or service dealing with matters; such as, weapons production, processing government loans application, enforcing public housing, bridge, road and airfield rules and regulations, printing currency, gathering vital statistics and administering urban and regional development.

May be designated according to position held in organization; for example,

Area Manager
 Divisional Manager

1113-130 ADMINISTRATOR, GOVERNMENT
DEPARTMENT(gov. serv.) DPT:118
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate administrators and supervisors, the activities of a national, provincial, territorial or local government division, section, unit or project:

Performs duties as described under the master title, 01-170 **MANAGER** (prof. & tech., n.e.c.), specializing in administering a government division or unit dealing with matters; such as, preparation of electoral list, title registration, registration of births, marriages and deaths, pollution control, recreational services, granting and issuing of licences, registration of aliens, prison administration, alcoholic beverage control, placement of unemployed and issuing of passports.

May sit on personnel promotional or selection boards. May be designated according to position held in organization; for example,

Division Chief
 Prison Warden
 Regional Manager
 Section Head

1115-POSTMASTERS

This unit group includes occupations concerned with carrying out managerial and administrative activities in post offices. Postmasters who operate a post office in conjunction with another business are classified in this unit group only if the post office operation is their principal activity. Supervisors

of mail sorters, carriers, and clerks are classified in Unit Group 4170, **SUPERVISORS: RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS.**

1115-110 POSTAL AREA MANAGER(gov. serv.) DPT:118
manager, postal offices.
GED: 4 SVP: 8 EC: 1 PA: S 5

Plans, organizes, directs and controls through subordinate postmasters and supervisors activities of post offices and mail services within metropolitan or rural postal areas to ensure attainment of post office department objectives:

Performs duties as described under master title, 01-170 **MANAGER** (any ind.), applying specialized knowledge of postal operations. Coordinates the implementation of new or revised delivery, transportation, wicket and other postal services and resolves operating problems arising from their application. Keeps abreast of developments in mail processing techniques and plans implementation of new methods and equipment. Investigates complaints and irregularities in postal operations and services and determines corrective measures. Conducts or takes part in meetings with groups, such as mail service contractors, managers of industrial and business organizations, municipal officials, and government delegates to discuss and resolve matters relating to postal operations, services and programmes. Provides guidance and direction to postmasters on departmental personnel policies, regulations, and programmes to ensure consistency in application and implementation. Recommends the establishment, re-arrangement or curtailment of post office activities within designated area.

1115-114 POSTMASTER(gov. serv.) DPT:138
GED: 4 SVP: 7 EC: 1 PA: S 5

Plans, organizes, directs and controls through subordinates at a supervisory level or above, postal and related services, in urban locality or other limited geographical area:

Performs duties as described under master title, 01-170 **MANAGER** (any ind.). Organizes and controls directly or through subordinates the collection, processing and delivery of mail. Administers post office financial operations for collecting and safe-guarding revenue obtained from sources, such as the sale of money orders, stamps, and rental of boxes, and ensures that revenue is accounted for in accordance with established procedures. Develops and instigates plans for meeting future service requirements, based on the estimated growth of community. Resolves customer complaints and informs public of postal laws and regulations. Prepares and submits detailed and summary reports of post office activities to designated persons. Evaluates performance, maintains discipline, and supervises training and development programmes of staff. Hires temporary staff during peak operating periods.

May control the operation of sub-post offices. May assist in performing routine duties of a senior postmaster and be designated accordingly,

Assistant Postmaster

1116-INSPECTORS AND REGULATORY OFFICERS, GOVERNMENT

This unit group includes occupations concerned with enforcing and advising on health, safety and other regulations, such as those pertaining to people, animals, plant life, products and establishments, in the capacity of local, provincial, federal inspectors or regulatory officers. Non-government inspectors, testers, graders and samplers in the fields of processing materials, machining, fabricating and assembling goods or products, are classified in their appropriate major, minor, and unit group.

1116-110 SUPERVISOR, INSPECTORS AND REGULATORY OFFICERS(gov. serv.) DPT:138

Supervises and co-ordinates activities of workers engaged in enforcing government policy decisions and implementing laws, rules and regulations, such as those pertaining to people, animals, plants, products and establishments, in the capacity of local, provincial, federal inspectors or regulatory officer (Unit Group 1116):

Performs duties as described under master title. 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular regulatory or inspecting activity, and be designated accordingly; for example,

Area Supervisor, Fisheries

Excise-Tax-Collection Supervisor

Grain-Inspection Supervisor

Meat-Inspection Supervisor

Supervisor, Agricultural-Products Inspection

Supervisor, Customs Inspection

Supervisor, Excise-Tax Officers

Supervisor, Immigration Officers

Supervisor, Postal Inspector

1116-114 CORONER(gov. serv.) DPT:038 GED: 6 SVP: 8 EC: 1 PA: L 5 6

Conducts investigations and hearings into deaths of individuals within areas of jurisdiction prescribed by provincial laws:

Performs or orders autopsies to determine cause of accidental, violent, unnatural or unexplained deaths, and to ascertain responsibility. Presides at inquests to view bodies, procures services of expert witnesses, and examines case. Witnesses under oath. Summons and swears in jurors for inquest proceedings. Disposes of unclaimed bodies and personal effects of deceased, issuing cremation or embalming certificate that details all particulars of death, following provincial laws. Confers with officials of health and law enforcement agencies to gather information relative to cases. Writes disposition and statement of findings, proceedings and recommendations for permanent records. Directs personnel staff or procures services of trained technicians engaged in conducting autopsies, pathological or toxicological analyses or gathering data for testimony.

May charge person with the offence of murder or of manslaughter and issue warrant for arrest and detention.

1116-118 EXCISE-TAX INSPECTOR(gov. serv.) DPT:228 GED: 5 SVP: 7 EC: 1 PA: S 5 6

Enforces excise tax laws and regulations, performing any combination of the following duties:

Audits accounting records to determine income, exemptions, payable taxes, compliance with reporting regulations and existence of fraud. Analyzes returns, financial statements and related documents to trace ownership and disposal of assets, to note unexplained fluctuations or changes in asset, liability and equity accounts, and to detect evasion of tax. Examines accounting systems and organization internal controls to ensure adequacy of reporting and measurement procedures for goods subject to excise taxation. Calculates tax arrears and applies penalties as required. Interviews taxpayers to evaluate accuracy of reported income and taxes. Advises public on legislation requirements and technical assessing matters. Discusses taxation procedure with establishment officials to ensure that techniques and methods used do not jeopardise collection of duty. Investigates reports of fraudulent practices to gather evidence and initiate prosecution of offenders. Prepares briefs and assists in searching and seizing records, and in preparing charges for court cases. Serves legal documents, such as subpoenas, warrants and notice of assessment. Seizes and conducts sale of property to satisfy tax claims and appears as witness in court. Inspects establishments to evaluate adherence to excise laws and regulations, discover fraudulent practices and ensure that goods are properly identified and secured against unlawful removal or diversion. Reconstructs or prepares financial statement to prove accuracy of reported taxable income when books and records are found to be inadequate or non-existent. Prepares reports outlining nature and extent of investigations, explaining adjustments, recommending action and giving opinions on adequacy of records. Compiles detailed working papers, supporting schedules, exhibits and search affidavits.

May be engaged in a particular taxation activity and be designated accordingly; for example,

Excise-Duty Agent

Excise-Tax Collector

Tax-Appeal Officer

Tax Assessor

Tax-Collection Officer

•• Tax-Enforcement Officer

1116-122 HUMAN-RIGHTS-COMMISSION OFFICER(gov. serv.) DPT:258 GED: 5 SVP: 7 EC: 1 PA: S 5 6

Enforces government acts relating to human rights, performing any combination of the following duties:

Investigates complaints of discrimination and uses persuasion and conciliatory techniques to ensure compliance with government acts. Participates in the preparation of brochures and reports dealing with racial, community, cultural or other humanity oriented problems. Maintains liaison with education, ethnic, labour and welfare organizations and participates in conferences and seminars pertaining to human rights. Assists in the development and conduct of research projects by originating questionnaires, interviewing citizens, analyzing and tabulating data and writing reports.

1116-126 CUSTOMS INSPECTOR(gov. serv.) DPT:268 GED: 5 SVP: 7 EC: 1 PA: L 5 6 7

Enforces customs laws and regulations by performing any combination of the following duties:

Inspects baggage of persons arriving from foreign countries to detect undeclared merchandise or contraband. Questions persons to determine nature of purchases. Verifies person's documents to certify, validate or record purchases, and issues permits and certificates accordingly. Determines admissibility of goods and assesses duty by referring to custom regulations and tables. Informs manufacturers, shippers and general public on customs laws, procedures and regulations, and assists them to comply with requirements. Confers with officers of other governments to obtain co-operation in enforcement activities. Observes fabrication of articles affected by customs laws and inspects finished goods to ascertain methods and materials used, when engaged in appraising or investigating activities. Weighs and measures imported goods, using devices, such as scales, measuring rods, calipers, and hydrometer. Appraises merchandise, considering physical properties and characteristics affecting market value. Compares samples of merchandise with description, classifies merchandise according to regulations, determines duty rate, and collects duties. Boards carriers arriving from foreign countries, and inspects and searches them to determine nature of load and ensure that all merchandise is identified and documented. Oversees unloading of merchandise from carriers to ensure compliance with customs and commerce laws. Seals holds and other compartments of vessels that contain sea-supplies to prevent illegal sale or smuggling of dutiable merchandise. Writes reports concerning classification and appraisal of merchandise, transactions, violations and discrepancies.

May perform undercover duties, including interviewing and interrogating of persons to obtain evidence of violations. May question persons seeking entry to Canada and study documents; such as, certificate of vaccination, passport, visa and customs declaration to determine their admissibility. May be engaged in a particular customs activity and be designated accordingly; for example,

Customs Appraiser

Customs Collector

Customs Examiner

Customs Investigator

1116-130 IMMIGRATION INSPECTOR(gov. serv.) DPT:268 GED: 4 SVP: 7 EC: 1 PA: L 5 6

Administers one or more activities of an immigration program, within immigration policies, laws and regulations, performing any combination of the following duties:

Determines admissibility of persons seeking entry into Canada by examining documents and conducting interviews to ensure adherence to immigration laws. Interprets laws, weighs socio-economic factors and explains decisions to persons. Assesses would-be immigrants following criteria, such as education, training, occupational skills, knowledge of required languages and employment opportunities. Grants landed-immigrant status, admits persons or orders detention or deportation. Counsels immigrants on social services available and employment opportunities to facilitate their integration in new environment. Disseminates information related to arrival or movement of immigrants and refugees to ensure adequate reception. Controls detention cases to ensure detention period is kept to a minimum. Assists in the removal of deported persons by seeking

authorization from receiving countries and securing necessary travel documents. Negotiates with foreign government representatives, police forces and National Parole Board in matters pertaining to deportation or repatriation of criminals. Processes requests from foreign authorities wishing to deport Canadian citizens and establishes their acceptability according to reciprocal arrangement treaties. Locates and apprehends persons presumed to be infringing on immigration laws. Maintains liaison with government agencies, organizations and associations to investigate and report illegal activities. Ensures adequate arrangements for transportation of immigrants. Prepares, presents and follows-up cases related to immigration appeals. Conducts continuous review of decisions and precedents, studying court comments, observations and judgments to detect errors and omissions in departmental procedures. Recommends adoption or revision of policies related to examination of persons seeking admission to Canada, case reviews or immigration appeals. Administers oaths and interviews persons under oath.

May instruct personnel in performance of duties. May be engaged in a particular immigration activity and be designated accordingly; for example,

Admissions Officer
Case-Review Officer
Immigration-Appeals Officer
Immigration-Enforcement Officer

1116-134 RENTALSMAN(gov. serv.) DPT:258

GED: 4 SVP: 7 EC: 1 PA: S 5 6

Enforces regulations concerning tenancy matters, performing any combination of the following duties:

Receives complaints and mediates disputes between landlords and tenants. Arbitrates disputes when parties request and agree to binding arbitration in case of mediation failure. Disseminates information to advise and educate landlords and tenants concerning rental practices, rights and remedies. Prepares advisory and educational program for presentation to interested groups. Receives and holds disputed security deposits and rents until necessary action is taken. Determines validity of claims against security deposits for damages to property. Requests assistance of municipal or provincial government officials to appraise sanitary conditions, fire and security hazards, and dangerous or faulty conditions on premises. Develops procedures to control moneys received and disbursed and prepares forms of residential leases.

1116-138 SAFETY INSPECTOR(gov. ser.) DPT:258

GED: 4 SVP: 7 EC: B 6 7 PA: L 2 3 5 6 7

Enforces laws and regulations governing safety in the fields of construction, and other industries, performing any combination of the following duties:

Inspects buildings during construction to ascertain that footings, framing, chimneys, stairways, electrical and plumbing installations, water and sewage connections and completed buildings meet safety regulations. Inspects old structures for safety hazards and warns owner to correct unsafe conditions. Inspects boilers, compressors, hoisting equipment, pressure vessels and refrigeration installations in such places as apartment buildings and industrial plants. Observes activities in underground or open-pit mines to detect unsafe conditions, and violations of mine safety regulations. Looks for rotten or incorrectly placed timbers, defective electrical and mechanical equipment and improperly stored explosives. Tests air to detect toxic or explosive gas or dust. Inspects grading, concreting and asphaltting of highways and of proposed structural installations and signs adjacent to highways. Interprets regulations to builders, company officials and property owners, and offers suggestions for alterations. Issues certificate of approval and condemns or prohibits installations not meeting requirements. Enforces industrial safety regulations to eliminate unsafe working conditions and health hazards in industrial plants. Investigates accidents and their causes to avoid repetition.

May be engaged in a particular safety inspection activity and be designated accordingly; for example,

Boiler Inspector
Building-Construction Inspector
Electrical Inspector
Engines Inspector
Highway-Construction Inspector
Industrial-Safety Officer
Mine Inspector
Plumbing Inspector

1116-142 POSTAL-SERVICE INSPECTOR(gov. serv.)

DPT:268

GED: 4 SVP: 7 EC: 1 PA: L 5 6

Surveys postal-service operations to ensure conformance to operational procedures and to detect criminal violations and irregularities, performing any combination of the following duties:

Conducts inspections of postal installations and mail service operations to ensure approved mail-handling procedures are being followed and that security regulations are strictly enforced. Performs financial audit of post office records and accounts to ascertain conformance to regulations and approved practices related to collection and expenditure of funds. Determines need for establishment or extension of postal services; such as, letter carrier delivery, rural routes, parcel or relay bundle routes, and suburban services. Ascertains nature and extent of criminal violations and postal service irregularities, such as illegal use of mails, postal theft and fraud. Prepares reports of inspections and recommends corrective measures; such as, improvements to accommodations, extensions to existing facilities and prosecution of violators. Resolves personnel problems dealing with grievances, discipline and incompetence, through interviews, and advises staff on proper course of action. Advises postmasters in interpretation and implementation of postal laws, regulations and procedures. Maintains liaison with police and fire departments in cases involving theft and fire.

1116-146 PRIMARY-PRODUCTS INSPECTOR, ANIMALS

(gov. serv.)

DPT:276

GED: 4 SVP: 7 EC: B 6 7 PA: L 4 5 6 7

Inspects animal products to ensure conformance with governmental standards and health regulations, performing any combination of the following duties:

Investigates cases of animal diseases communicable to man to prevent and restrain their spreading. Examines live animals and carcasses to detect evidence of disease and rejects those which are sub-standard. Examines poultry to ensure proper grading. Inspects egg samples to determine their condition, interior quality and, shape and weight of shell. Ensures that ingredients used in processing meat, meat products and poultry fall within standards of purity and grading. Tests milk to establish percentage of butter fat in milk of individual cows in herd to assist farmers in reaching higher yields. Performs organoleptic tests of dairy products to ascertain their suitability for marketing. Institutes and enforces quarantine and other regulations governing import, export and other movements of animal products. Advises livestock owners on economical aspects of disease eradication and informs producers and the general public on health implications of diseases transmissible from animals to humans.

May regulate importation of dairy products. May instruct inspectors in work methods and procedures. May be engaged in a particular activity and be designated accordingly; for example,

Dairy-Products Inspector
Meat Inspector
Poultry Inspector

1116-150 PRIMARY-PRODUCTS INSPECTOR, PLANTS

(gov. serv.)

DPT:267

GED: 4 SVP: 7 EC: B 6 7 PA: L 4 5 6 7

Inspects plant products to ensure conformance with governmental standards, performing any combination of the following duties:

Inspects fruit and vegetables at different processing stages to establish quality, size and grade. Examines specimens of produce to detect and identify diseases, insects or other damage and rejects those of substandard quality. Inspects crops to ascertain genetic purity, presence of destructive insects, extent of disease, damage to crop, and variety of weeds or other foreign material. Grades seeds according to factors, such as heat injury, colour, size, sprouting and immixture. Inspects fertilizers, pesticides and animal feeds to ensure compliance with standards related to guarantees, labeling and registration. Grades hay according to colour, leafiness, degree of maturity and extent of curing. Inspects cargo, vehicles, grain elevators, processing and storage areas, packing equipment and materials to ascertain that sanitary conditions meet governmental specifications, or to prevent introduction and spread of destructive diseases and insects. Reports existence of disease conditions to other governmental authorities. Confers with growers, farmers and shippers regarding methods of culture, registration requirements, eradication of diseases and regulations pertaining to grading, packing and loading of products.

May judge crop plants and seeds at local agricultural fairs and field days. May instruct inspectors in work methods and procedures. May be engaged in a particular activity and be designated accordingly; for example,

Agricultural-Products Inspector
Crop-Certification Inspector

1116-154 MOTOR-TRANSPORT REGULATIONS

OFFICER(gov. serv.)

DPT:228

GED: 4 SVP: 6 EC: 1 PA: S 5 6 7

Administers provincial laws and regulations related to motor vehicle transportation, performing any combination of the following duties: Conducts road test examination and observes driving performance of applicants for driver's licences. Grades written and visual examination, and rates driving ability for each road test manoeuvre. Collects fees and issues licence or instruction permit according to test results. Evaluates traffic record of driver by considering laws and other factors; such as number and nature of accidents, number and gravity of traffic violations, and driver's occupation. Determines driver's attitude and probability of repeated offences to recommend suspension, revocation or reinstatement of driver's licence. Receives and evaluates requests for reinstatement of licences and approves or disapproves them. Conducts hearings on request of persons whose licences have been suspended or revoked to obtain information for reversal or maintenance of original decision. Confers with police and court officials to compile information on drivers' habits, facilitate location or punishment of violators and promote traffic safety. Counsels drivers, by advising them on proper driving methods, pointing out their poor driving habits and advises on methods of correction. Examines applications for motor vehicle registration and verifies information against public files. Answers inquiries concerning driver licensing procedures and complaints. Investigates complaints of illegal charges, rebates, and of damage and injury claims, according to province. Observes school vehicles in operation to detect overloading or erratic driving. Monitors taxi-cab operations to discover infringements of public transportation laws. Inspects motor vehicles for mechanical defects to determine safety of operation and advises drivers of necessary corrective action. Visits garages, service stations and used car lots to ensure that operating permits are in order. Keeps records and prepares detailed reports.

May estimate liability of uninsured motorists involved in accidents to facilitate application of penalties and bonding requirements. May allocate points for accidents or convictions and mail warnings to violators facing penalties. May lecture to school and community groups on driving improvement programmes. May be engaged in a particular activity and be designated accordingly; for example,

Claims Investigator
Driver's-Licence Examiner
Motor-Transportation Inspector
Reviewing Officer, Driver's Licence

1116-158 INSPECTOR, HEALTH STANDARDS(gov. serv.)

DPT:258

GED: 4 SVP: 6 EC: B PA: L 5 6 7

Enforces laws and regulations governing health standards and provides advice, performing any combination of the following duties: Locates persons suspected of exposure to communicable diseases to prevent further spread of disease. Interviews exposed persons to secure information concerning other persons who may have been exposed. Advises people to obtain treatment. Inspects restaurants, hotels, cafeterias and other public places to ensure compliance with sanitation laws. Takes samples of water, food and air, and orders chemical, physical or biological tests to determine contamination. Visits plants where food, drugs, cosmetics and similar items are manufactured to investigate sanitary conditions and health and hygiene habits of persons handling consumer products. Destroys sub-grades or prohibits sale of impure, toxic, damaged or misbranded items. Ascertains that required permits have been obtained and are displayed. Inspects nursing homes and hospitals to ensure conformance with standards and laws governing sanitation, facilities, ethical practices, maintenance of records and competence of personnel. Recommends changes in administrative procedures, facilities and standards to improve efficiency and service to patients. Applies regulations governing manufacture, labelling and sale of upholstered and stuffed articles to ensure use of approved materials. Inspects waste disposal sites to ensure that pollution control regulations are followed. Inspects water wells to enforce provisions of

permits. Writes reports and issues violation notices and corrective orders.

May be engaged in a particular activity and be designated accordingly; for example,

Food-and-Drug Inspector
Nursing-Home Inspector
Public-Health Inspector
Upholstered-and-Stuffed Articles Inspector
Water-Wells Inspector

1116-162 FISHERIES INSPECTOR(gov. serv.)

DPT:267

GED: 4 SVP: 6 EC: B 2 PA: L 4 5 6 7

Enforces laws and regulations pertaining to fishing activities, safety of equipment, and quality of products, performing any combination of the following duties:

Conducts processing plant, cold storage and boat inspections. Collects fish samples and performs physical, chemical and bacteriological analyses of products, following standard methods. Determines extent of parasite infestation in fillets, using candling table. Ascertains concentration of chlorine and brine solutions in processing and washdown waters, using portable concentration measuring devices. Detects and measures radioactivity in shipments, using geiger counter. Advises industry officials on fish processing methods, plant sanitation, quality of products and registration requirements. Recommends issuance, suspension or withdrawal of registration. Suggests improvements in utilization of by-products; such as, fish meals, fish oils and fish solubles. Ascertains that corrective measures are being carried out and takes action accordingly. Recommends method of disposal of fish unfit for human consumption. Determines eligibility of applicant for insurance coverage, appraising insurable commercial value of vessels and calculating cost of premium from standard cost table. Collects premium to validate indemnity coverage. Investigates accidents to evaluate damages and advises fishermen regarding preparation of claims and repairs on equipment. Suspends indemnity coverage on vessels not meeting standards. Recommends payment of loans and grants, development of mooring and storage facilities for fishermen. Writes reports, stating condition of processing facilities and legitimacy of applications for vessel licensing.

May supervise work of personnel engaged in performing similar duties. May be engaged in a particular fishing activity and be designated accordingly; for example,

Appraiser, Fishing Vessels
Fish-Quality Specialist

1116-166 FIRE INSPECTOR(gov. serv.)

DPT:268

fire-prevention officer.

GED: 4 SVP: 6 EC: B 6 PA: L 2 5 6 7

Inspects buildings to detect fire hazards and enforce municipal, provincial and federal laws and regulations:

Examines exteriors and interiors of buildings to detect hazardous conditions or violations of laws and regulations. Scrutinizes fire-fighting and fire-prevention equipment, such as, sprinkler systems, fire extinguishers and asbestos curtains to ensure operating efficiency. Inspects theatres during performances to prevent unsafe conditions such as overcrowding, blocked exits and crowded aisles. Examines flame-proofing of stage sets, scenery, curtain drops and draperies to eliminate or counteract fire hazards. Prepares individual report of violations of unsafe conditions. Discusses fire hazards with owner or manager and recommends safe methods of storing inflammables or other hazardous materials and conditions requiring corrective action such as faulty wiring. Keeps records and prepares monthly report of activities.

1116-199 OTHER INSPECTORS AND REGULATORY OFFICERS, GOVERNMENT

This group includes government inspectors and regulatory officers, not elsewhere classified; for example, those who appraise municipal real estate to determine taxable value; investigate absenteeism in schools; conduct in-flight testing of air-navigational aids, traffic controls and communication equipment; screen and classify motion pictures; conduct examination and flight tests to determine individual's ability to qualify for aircraft pilot's licence; enforce government acts related to human rights and discrimination in employment; ensure compliance with laws regulating child labour, wages and hours of work in business establishments; visit establishments with liquor licences to ensure that licencing standards are maintained; conduct pollution control surveys under legislation; take saliva and urine samples from

winning horses in races; investigate complaints of electrical interference with radio and television reception; locate and destroy noxious weeds in rural areas; inspect and test retail scales, meters, containers and other measuring devices to protect public against fraud; inspect land and new constructions to ensure conformance with zoning regulations. Typical examples of occupational titles covered by this residual group definition are:

Assessor(gov. serv.)
Attendance Officer(gov. serv.)
Broadcast-Interference Inspector(gov. serv.)
Facilities-Flight-Check Pilot(gov. serv.)
Film Censor(gov. serv.)
Flight-Operation Inspector(gov. serv.)
Labour Investigator(gov. serv.)
Liquor-Licence Inspector(gov. serv.)
Pollution-Control Inspector(gov. serv.)
Race-Horse Inspector(gov. serv.)
Weed Inspector(gov. serv.)
Weights-and-Measures Inspector(gov. serv.)
Zoning Inspector(gov. serv.)

1119-OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with administering a wide variety of activities, unique to government, in such fields as public health, labour arbitration, civil rights, welfare and compensation. Those occupations unique to government, whose duties are similar to the duties described in the master title definitions 01-090 GENERAL MANAGER (prof. & tech., n.e.c.) and 01-170 MANAGER (prof. & tech., n.e.c.) are classified in Unit Group 1113, GOVERNMENT ADMINISTRATORS.

Federal Officials and Administrators, Unique to Government 1119-110 through 1119-126

1119-110 FOREIGN-SERVICE OFFICER(gov. serv.) DPT:118
GED: 5 SVP: 7 EC: 1 PA: L 5 6

Represents Canada and its citizens, and promotes Canadian national interest in other countries and international organizations, performing any combination of the following or similar duties.

Develops and recommends foreign policy to the Canadian government. Interprets Canadian foreign policy to governments and nationals of foreign countries. Disseminates information to promote trade and international good will. Participates in international discussions related to scientific, technical, environmental and other matters. Negotiates with foreign governments to further and protect Canadian legal, economic, political and other interests, and welfare of resident or visiting Canadian citizens. Issues passports to Canadians, and visas to foreigners wishing to visit or emigrate to Canada. Writes reports based on observation and analysis of conditions and developments in foreign countries, such as political activities, economic and tariff policies, major financial transactions, market conditions, trends in public opinion, and social conditions. Reports on prospective location, and analyzes opportunities for industrial investment and development. Recommends and implements policies to aid developing countries through programs of capital assistance, food and commodity aid, and educational and technical assistance. Promotes better mutual understanding by encouraging and administering cultural exchange programs in fields such as education, arts and sciences.

May be designated according to position held or function performed.

1119-114 CO-ORDINATOR, BILINGUAL-SERVICE(gov. serv.) DPT:168
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Provides special bilingual assistance to senior governmental officials on matters such as speeches, correspondence and publications, utilizing an extensive knowledge of the two official languages and the bicultural nature of the country:

Studies journals, directives and other publications relating to departmental economic and social policies, programs and objectives to

acquire background knowledge of bilingual and bicultural oriented problems. Interprets oral and written information in both languages to ensure effective communication and awareness of attitudes and opinions. Translates incoming correspondence, memoranda and reports for unilingual officials and prepares replies for signature. Evaluates and edits or directs editing of outgoing correspondence or prepared speeches, in one or other of the official languages, to ensure that policies are correctly interpreted. Summarizes articles and reports appearing in periodicals in one language and prepares briefs in the other language on items which purport to interpret government policy. Recommends language or cultural approach most likely to be successful in dealing with sensitive situations which arise. Conducts correspondence and interviews in either of the official languages with officials of other departments, agencies and the public.

1119-122 VETERANS' SERVICE OFFICER(gov. serv.) DPT:118

GED: 4 SVP: 7 EC: 1 PA: S

Advises and aids veterans or their dependants to present benefits or pension claims to pension authorities:

Evaluates and determines validity of claim according to regulations of legislation. Analyses veteran's record of work, education, training, and physical condition, in terms of job requirements and labour market conditions, to determine veteran's possible earning capacity. Prepares claim forms and briefs, and assembles related evidence. Prepares written report to document case in preparation for hearing. Appears before and discusses case with board members to determine veteran's eligibility for benefits. Prepares information bulletins and engages in correspondence to interpret current legislation.

May adjudicate disputed claims.

1119-126 REFEREE, UNEMPLOYMENT-INSURANCE APPEALS(gov. serv.) DPT:168
GED: 4 SVP: 7 EC: 1 PA: S 5

Acts as member of board which renders decisions concerning right to insurance benefits:

Participates in appeal hearings to discover pertinent facts from employer and claimant relating to disputed claim in accordance with federal statute and procedures. Reviews evidence and sustains or dismisses claim decision rendered by insurance official, based on previous testimony, claim records, applicable provision of law and precedents established. Writes appeal decision explaining ruling and informs interested parties of result. Confers with legal staff and other personnel of Unemployment Insurance Commission to obtain additional information bearing on appeal and to clarify future implications of decision.

May act as chairman of appeal board and be designated accordingly, Chairman, Unemployment-Insurance Appeals Board

Provincial Officials and Administrators, Unique to Government 1119-146 through 1119-166

1119-146 OMBUDSMAN(gov. serv.) DPT:018
commissioner of inquiries; people's protector
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Receives, investigates and reports on citizen's grievances regarding alleged mistreatment by government personnel:

Receives written petition and investigates citizen's grievance, such as, assessment of land, civil service complaints, racial, ethnic or linguistic discrimination, expropriation of property and unwarranted detention. Makes recommendation to refer grievances or complaints, to proper authorities for corrective action. Cancels, reviews, alters or sustains governmental decisions according to facts obtained. Rejects petitions with inherent right of appeal. Prepares annual report on activities for legislative assembly. Appoints assistants and other employees as necessary.

May summon and interview under oath, government officers able to provide information concerning a grievance.

1119-150 EXTENSION SUPERVISOR(gov. serv.) DPT:138 district-program supervisor. GED: 5 SVP: 7 EC: 1 PA: S 5 6

Supervises and co-ordinates activities of workers engaged in agricultural or home economics services of agricultural extension program within an assigned region:

Organizes and conducts training programs to instruct extension workers in agricultural or home economics. Determines methods and procedures or services required and assigns tasks to workers according to extension program policies. Collects, analyses and distributes data concerning agricultural or home economics subjects to keep extension workers informed. Examines methods and procedures to evaluate content and effectiveness of services within district. Delivers or directs delivery of lectures to groups, such as commercial and community organizations, to publicize and promote extension service activities. Reviews personnel data and recommends action, such as hiring and discharging of workers and adjusting salaries. Prepares information pamphlets and brochures concerning farm management and farm financing.

May assist in formulating budget requests to obtain operating funds.

1119-154 PUBLIC TRUSTEE(gov. serv.) DPT:138 GED: 5 SVP: 7 EC: 1 PA: S 5

Directs personnel engaged in activities, such as disposing of unclaimed property and of unclaimed estates of deceased persons, administering estates of persons confined to mental hospitals, and maintains special trust funds:

Directs search for owners of unclaimed property, such as abandoned automobiles and cash or property of deceased individuals without known heirs. Ascertains assets of deceased persons, supervises inventories, investigates next-of-kin and prepares genealogical chart for submission to legal authority. Receives and directs processing of recovery claims, according to results of investigation or other evidence of ownership. Authorizes deposit of unclaimed monies in trust fund or arranges for public auctions of unclaimed property. Administers such special trust funds as required. Administers estates of inmates confined to mental institutions by arranging for dependent's allowances, conservation of assets, operation of business affairs and use of patient's assets by members of family.

1119-158 AGRICULTURAL REPRESENTATIVE(gov. serv.) DPT:228

farm consultant; grower's adviser.

GED: 5 SVP: 6 EC: B PA: L 4 5 6 7

Develops, promotes and provides specialized agricultural service programs in an assigned district:

Collects, analyzes and evaluates agricultural data. Plans and develops techniques, and advises farmers to assist them in solving problems, such as crop rotation and improvement, and soil erosion. Demonstrates practical procedures used in solving agricultural problems. Meets with commercial organization representatives or government specialists to inform them of available advisory services and to obtain their co-operation. Prepares activity, planning and other reports, and maintains record of services rendered and effect of advice given. Inspects fields and greenhouses to analyze unhealthy growths and recommends corrective measures. Prepares information and training leaflets, pamphlets and other material for use as training aids. Prepares and conducts courses and lectures in specialized fields for extension personnel, and farm and other groups.

May advise farmers on readiness of crops for harvest or curing techniques. May be designated according to field of specialization; for example

Agricultural-Engineering Specialist

Livestock Specialist

Soil and Crops Specialist

1119-166 WELFARE AND COMPENSATION OFFICER(gov. serv.) DPT:268 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Administers welfare and compensation laws and regulations, performing any combination of the following duties:

Interviews applicants for assistance to determine their eligibility for welfare benefits. Investigates health and medical records, and obtains details of saving deposits, cash-on-hand, surrender values of insurance policies and earnings. Maintains liaison with welfare agencies and

guides applicants for assistance to appropriate source. Discusses status of particular cases with relevant officials to determine course of action. Prepares welfare budgets, issues relief vouchers and approves or arranges for transportation of indigent hospitalization cases. Inspects working conditions and welfare arrangements in factories and other work places. Investigates and verifies reports of industrial accidents to determine right to compensation and salary. Examines municipal welfare and assistance files and accounts to determine eligibility of recipients and to verify amounts paid.

May be designated according to nature of assistance provided; for example,

Welfare-Field Worker

Workman's-Compensation Officer

Municipal Officials and Administrators, Unique to Government

1119-186 through 1119-190

1119-186 MEDICAL-HEALTH OFFICER(gov. serv.) DPT:128 public-health physician.

GED: 6 SVP: 8 EC: 1 PA: L 5 6

Directs and controls the implementation and enforcement of measures for safeguarding and promoting health in a city, county, or other municipal district or region:

Directs and co-ordinates public action to promote the health of a municipality, and to eradicate or control infectious diseases and diseases of major economic and social importance, such as tuberculosis and venereal diseases. Directs inspections of nursing homes and certain community institutions, of food processing plants, hotels, restaurants, and other public establishments, to ensure conformity with prescribed standards, and recommends remedial action. Oversees or supervises facilities concerned with public health in clinics and schools, such as those of dental and nursing services. Advises on measures to improve environmental health, such as sanitation, sewage, water, air, and infectious insects.

May impose quarantine on areas or persons to prevent spread of contagious diseases. May order decontamination of infected places, including private homes. May have responsibility for health services of a type of municipality and be designated accordingly, Medical Officer of Health, City

1119-190 TOWN CLERK(gov. serv.) DPT:138 GED: 5 SVP: 7 EC: 1 PA: S 5 6

Performs any combination of following duties to facilitate work of city executive and maintain liaison with other governmental units:

Drafts agendas and bylaws for town council. Records minutes of council meetings, answers official correspondence, and prepares reports on civic needs. Supervises clerical personnel engaged in administrative duties. Receives, tabulates and certifies accuracy of election returns. Directs printing and distribution of laws, resolutions and other official documents. Issues marriage licences. Keeps complete set of municipal bylaws and vital statistics. Attends and acts as secretary for town or city council.

May direct activities of personnel employed in municipal libraries, and develop collection of books and periodicals. May keep fiscal records and accounts. May be designated according to type of local government; for example,

City Clerk

Municipal Clerk

Other Officials and Administrators Unique to Government

1119-210 through 1119-299

1119-210 CONCILIATOR(gov. serv.) DPT:118 conciliation officer.

GED: 5 SVP: 8 EC: 1 PA: S 5 6

Negotiates with management and union representatives to resolve labour disputes:

Confers with management and labour representatives separately or collectively to obtain their respective attitudes on contentious issues. Assesses the different points of view and suggests alternatives or compromises based on knowledge of past experience or precedents. Persuades parties to discuss other articles on agenda when negotiations appear to falter on specific issue. Acts as channel of communication between parties conducting meetings separately.

Evaluates confidential information provided by each party and determines how it can best be used without exposing source or specific details. Resolves contentious points to arrive at mutually agreeable solution. Reports decisions reached or outcome of negotiations to management and union representatives. Prepares settlement memorandum and obtains signature of both parties. May give instructions in conciliation practices and procedures. May evaluate proposals of both parties in dispute and make arbitrary contractual decisions, and be designated accordingly.
Arbitrator

1119-214 ADMINISTRATOR, DENTAL-HEALTH SERVICE(gov. serv.; medical) DPT:128
GED: 5 SVP: 8 EC: 1 PA: L 4 5 6 7

Plans, organizes and maintains dental-health program of public and private health agencies:

Analyzes dental needs of community to determine changes, trends and discrepancies in dental-care programs. Instructs school and other community groups in dental hygiene and known preventive methods, in clinics or through communication media. Plans and directs the provision of dental services to school children and other groups. Investigates methods for evaluating changes in dental-health status and needs of community.

1119-218 EDUCATIONAL DIRECTOR, PUBLIC-HEALTH NURSING(gov. serv.) DPT:128
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans and directs educational program of public-health nursing service:

Develops educational plans for in-service training of nurses and personnel of related community agencies. Co-operates with nursing specialists in organizing educational programs. Prepares educational materials for use in teaching and demonstrating nursing activities. Takes part in selecting nursing candidates and orienting new employees. Co-operates with nursing schools and colleges in providing supervised field instruction to enable students to gain practical experience and to observe nursing techniques. Conducts surveys and analyses to determine adequacy and effectiveness of educational materials and of program.

1119-222 MINISTERIAL ASSISTANT(gov. serv.) DPT:118
GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Provides assistance to minister or deputy-minister of government department in carrying out administrative duties by performing one or more of the following duties:

Directs administrative operation of minister's office by establishing, modifying and controlling work-plan procedures. Analyzes incoming letters, memoranda, reports and submissions on minister's behalf and gives direction for departmental action on matters not requiring personal involvement of minister. Drafts replies to correspondence for minister's signature. Answers inquiries received from government departments, organizations, representatives and general public by letter or telephone. Evaluates, for form and substance, correspondence prepared by others for minister's signature, to ensure it reflects department's policies and standards. Co-ordinates departmental action in the preparation, production and submission of parliamentary replies. Prepares briefing summaries for minister on complex matters submitted by divisions of department and conducts additional research as required or directed. Advises minister on particular or general implications of policy proposals. Maintains liaison, on behalf of minister, with senior departmental officers and officials of other governmental departments on matters requiring minister's attention or decision. Receives personal representations from federal, provincial and municipal officials, the general public, members of welfare organizations, or other groups and determines specific issues involved. Meets with departmental officials or requests submission of reports to develop possible solutions to problems, and makes recommendations to the minister or senior departmental officers.

1119-230 HISTORIC-SITES ADMINISTRATOR(gov. serv.) DPT:168
GED: 5 SVP: 6 EC: 1 PA: L 5 7

Conducts studies to guide establishment, conservation and reconstruction of national historic parks and sites:
Conducts research, based on written, physical and oral evidence, to

provide information for historical sites and monument agency in selecting sites for development. Provides detailed report to serve as guidelines for restoration by estimating extent of development needed. Provides information and encouragement to historical societies on topics associated with Canadian history. Participates in historical studies by searching and analyzing historical sources, and publishes reports to indicate historical and archeological significance. Collates documentary and archeological evidence to produce reports on physical and structural details of site and its period of historical significance. Directs preparation of brochures, exhibits, maps, photographs and similar material to stimulate public interest in site. Maintains custody of historical documents acquired during research studies.

1119-234 CROWN-ASSETS DISPOSAL OFFICER(gov. serv.) DPT:118
surplus-property officer.
GED: 4 SVP: 7 EC: 1 PA: S 5 7

Disposes of redundant or obsolete government property and equipment by sale, lease, donation or destruction, performing any combination of the following duties:

Visits government installations and inspects items, such as motor vehicle, land, tools, military supplies and office equipment to determine condition, and estimates market value. Studies market conditions and disposal facilities to determine time, place, type of sale, lease or donation, and whether items should be disposed individually or in bulk. Prepares advertising material and selects media for its release. Selects potential donation-recipients, utilizing knowledge of probable needs and comparing inventories with request received. Assigns duties and directs activities of staff engaged in disposals. Determines method of display and sets precision conformance with estimated value and market condition. Advises government agencies or contracted-establishments of salvage possibilities of material. Recommends destruction or abandonment of property not deemed possible or practical to sell, lease, donate or salvage. Negotiates details of transfer with agency involved. Ensures that property sold, leased or donated complies with set criteria for disposal.

1119-238 PARK SUPERINTENDENT(gov. serv.) DPT:138
GED: 4 SVP: 7 EC: B PA: L 4 5 6 7

Co-ordinates activities of workers engaged in developing, maintaining protecting and promoting utilization of federal, provincial or municipal parks:

Tours selected areas to assess development possibilities and determine maintenance needs. Prepares estimates of costs to plan and provide or improve appearance of park area, fish and wildlife protection, recreation facilities and visitor safety. Directs workers engaged in maintenance and development of parks, rescue activities and fire protection in park area. Investigates accidents and vandalism, theft, poaching and other violations and presents evidence before court or designated legal authority. Answers letters of inquiry and addresses visitors and civic organizations to inform public of park regulations, recreational facilities, and historical and scenic features. Prepares reports of area park activities. Inspects park's drinking water resources and takes samples for testing. Ensures that equipment, such as, vehicles, fire pumps, boats and motors are maintained in good condition.

May maintain records of visitor attendance, permits issued and monies received.

1119-242 LABOUR-RELATIONS RETURNING OFFICER(gov. serv.) DPT:138
GED: 4 SVP: 6 EC: 1 PA: S 5 6

Plans, supervises and conducts representation votes in establishment to certify or de-certify a labour union as sole contractual bargaining agent:

Arranges, as directed by labour relations board, the holding of a representation poll of employees in establishment during working hours. Supervises activities of deputy returning officers, and instructs vote scrutineers. Rules on eligibility of persons whose right to vote has been challenged and segregates ballots of employees not included on voter's list. Opens ballot box at close of poll and counts ballots deposited before representatives of both parties. Decides on validity of disputed or improperly marked ballots. Prepares report on voting for labour relation board. Arranges, convenes and chairs meetings of both parties to secure information on voting constituency, and questions parties on issues involved to try to reach agreement.

Ascertains reasons for challenged names, records hearings, and obtains approval of voter's list.

May extend voting hours in unusual cases. May serve summonses and perform perliminary investigation of alleged irregularities.

1119-246 RELOCATION COMMISSIONER(gov. serv.)

DPT:138

GED: 4 SVP: 6 EC: 1 PA: S 5 6

Supervises and co-ordinates activities of workers engaged in relocating people from expropriated property:

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Co-ordinates plans to resettle people from expropriated properties and to effect relocation of homes, businesses or other establishments affected by highway, flood-control or other similar public improvement. Confers with people affected by condemnation or expropriation proceedings to render the relocation as comfortable as possible.

May arrange the moving of houses, fences and other structures, drilling of wells, and construction of new foundations.

1119-250 TRAFFIC-SAFETY ADMINISTRATOR(gov. serv.)

DPT:138

GED: 4 SVP: 6 EC: 1 PA: S 5 6

Directs and co-ordinates traffic-safety programs for local or provincial authorities:

Plans and directs safety campaigns and co-ordinates activities of auxiliaries, such as school-crossing guards and school-boy patrols. Delivers speeches and participates in public forums and broadcasts to educate motorists and pedestrians in safety habits. Prepares, or directs workers engaged in preparing pamphlets, advertisements, spot broadcasts and other educational materials concerned with safety. Confers with officials of other departments or authorities, such as provincial police, traffic engineers and fellow safety administrators to co-ordinate program activities. Takes part in the deliberations of committees which recommend changes in legislation and highway-use regulations to improve safety conditions.

May direct workers engaged in compilation of traffic safety statistics and may evaluate statistics according to accepted procedures. May formulate plans for improving driver education. May maintain files of accident reports and map reference accident locations to facilitate corrective measures.

1119-254 ADVISOR, PUBLIC ASSISTANCE(gov. serv.)

DPT:228

GED: 4 SVP: 6 EC: 1 PA: S 5 6

Reviews, evaluates and establishes standards and practices for governmental welfare organizations and agencies:

Interprets federal and provincial standards and program goals to local boards and community groups. Consults with municipal and community welfare councils on matters relating to program. Evaluates agencies' administration, program, personnel and facilities in relation to changing community needs, and recommends changes to meet needs. Informs federal or provincial agency concerning conditions and operational trends in local agencies and communities. Confers with representatives of other national agencies.

May organize or conduct training and staff development programs. May establish new local affiliates or instigate new programs.

1119-258 PARK RANGER(gov. serv.)

DPT:267

GED: 3 SVP: 6 EC: 0 PA: L 4 5 6

Administers regulations and carries out established policies in national, provincial or municipal parks, performing any combination of the following duties:

Provides visitors with information, such as park regulations, points of interest and availability of first aid, medical, recreational and other facilities. Cautions, evicts or apprehends those who violate park regulations. Directs or participates in first aid and rescue activities. Enforces standards of cleanliness and sanitation. Directs traffic, investigates accidents and patrols park areas to prevent fires, vandalism and theft. Records park-use statistics and incidents in park. May supervise and train subordinates in surveillance of camp sites, and operation of fire-fighting equipment. May supervise seasonal employees in wood cutting, garbage collection and other maintenance activities.

1119-299 OTHER GOVERNMENT OFFICIALS

This group includes government officials, not elsewhere classified; for example, those who prepare paroles for inmates of penal institutions, direct public service qualifying examinations, adjudicate claims of persons seeking social security benefits, process provincial vital statistics, arbitrate damages caused by industrial pollution, determine eligibility of public housing applicants, investigate insurance and loan companies, and direct maintenance of city or district garbage collection. Typical examples of occupational titles covered by this residual group definition are:

Chairman, Parole Board(gov. serv.)

Chief Proctor(gov. serv.)

Claims Adjuster(gov. serv.)

Deputy Registrar(gov. serv.)

Fumes Arbitrator(gov. serv.)

Housing-Project Interviewer(gov. serv.)

Insurance Commissioner(gov. serv.)

Sanitation Supervisor(gov. serv.)

113/114-OTHER MANAGERS AND ADMINISTRATORS

This minor group includes occupations concerned with carrying out senior-and middle-management activities common to governmental, industrial, commercial and other organizations. Functions include: planning, organizing, directing and controlling activities in the fields of natural science and engineering, social science, teaching, medicine, finance, personnel and industrial relations, sales and advertising, purchasing, services, production, transport and other areas of the economy. Senior official and managerial occupations, unique to government, are classified in Minor Group 111, OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT. OTHER MANAGERS AND ADMINISTRATORS are classified in the following unit groups:

1130 General Managers and Other Senior Officials

1131 Management Occupations: Natural Sciences,
Engineering, and Mathematics

1132 Management Occupations, Social Sciences
and Related Fields

1133 Administrators in Teaching and Related
Fields

- 1134** Administrators in Medicine and Health
- 1135** Financial Management Occupations
- 1136** Personnel and Industrial Relations
Management Occupations
- 1137** Sales and Advertising Management
Occupations
- 1141** Purchasing Management Occupations
- 1142** Services Management Occupations
- 1143** Production Management Occupations
- 1145** Management Occupations, Construction
Operations
- 1147** Management Occupations, Transport and
Communications Operations
- 1149** Other Managers and Administrators, n.e.c.

**1130-GENERAL MANAGERS AND OTHER SENIOR
OFFICIALS**

This unit group includes occupations in the senior levels of managerial and administrative work, as described under the master title, 01-190 GENERAL MANAGER (prof. & tech., n.e.c.) concerned with planning, organizing, directing and controlling on owner's or own behalf, an industrial, commercial, or other enterprise, establishment or organization. Chief executive officers of chains of establishments are classified in this unit group. Senior officials, such as presidents and vice-presidents, are also included. General Managers and Managers, unique to government, are classified in 1113, GOVERNMENT ADMINISTRATORS. Middle management occupations are classified in the appropriate unit groups of Minor Group 113/114, OTHER MANAGERS AND ADMINISTRATORS.

1130-110 CHIEF EXECUTIVE, EDUCATION(educ.) DPT:018
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managerial officials, activities of universities; elementary and secondary schools; technological, trade, vocational and fine arts schools; and training and instructional organizations in industry, private business and other agencies, (Unit Group 1133):
Performs duties as described under master title, 01-190 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of management and organization of educational activities.
May specialize in managing a particular field of education and be designated accordingly; for example,
Director of Education, Public School
General Manager, Business Schools
General Manager, Trade Schools
President, University

1130-114 HOSPITAL ADMINISTRATOR(medical) DPT:018
executive director, hospital.
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers, activities of organizations engaged in health diagnosing and treating, nursing and therapy, medical research, preventive medicine and other areas in medicine and health, (Unit Group 1134):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of hospital administrative practices.

**1130-118 CHIEF EXECUTIVE, NATURAL SCIENCES AND
ENGINEERING(prof. & tech., n.e.c.) DPT:018**
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managerial officials, activities of organizations engaged in fields, such as architecture and engineering, life sciences, physical sciences, mathematics, statistics and systems analysis, (Unit Group 1131):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of applied and natural science and mathematics management practices.
May specialize in managing a particular natural science, engineering or related field of activity and be designated accordingly; for example,
Executive Director, Aerospace Study(air & space-craft)
General Manager, Engineering Research
General Manager, Environmental Studies
Vice-President, Research Operations

1130-122 GENERAL MANAGER, CONSTRUCTION
(construction) **DPT:018**
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers, activities of organizations engaged in construction, major alteration, maintenance or repair of structures, facilities and systems, (Unit Group 1145):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of construction activities, methods and procedures.
May specialize in managing a particular field of construction activities and be designated accordingly; for example,
General Manager, Building Construction
General Manager, Highway Construction

1130-126 GENERAL MANAGER, FINANCE(bank. & finance)
DPT:018
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers, activities of banks, credit agencies, investment and insurance companies, or similar financial institutions, (Unit Group 1135):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of financial management practices.
May specialize in managing a particular financial field and be designated accordingly; for example,
General Manager, Insurance
General Manager, Trust
President, Bank

1130-130 GENERAL MANAGER, PRODUCTION(prof. & tech., n.e.c.) DPT:018
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers, activities of production organization, (Unit Group 1143):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of production management practices.
May specialize in managing a particular type of production organization and be designated accordingly; for example,
General Manager, Electrical Appliances Manufacturing(electric equip.)
General Manager, Feed-and-Flour Mills(feed & flour mill.)
General Manager, Pulp and Paper Production(pulp & paper)
General Manager, Shoe Manufacturing(shoes)

1130-134 GENERAL MANAGER, SALES AND ADVERTISING(prof. & tech., n.e.c.) DPT:018
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers, activities of sales and advertising organizations, (Unit Group 1137):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of sales and advertising management practices.
May specialize in managing sales or advertising activities and be designated accordingly; for example,
General Manager, Advertising
General Manager, Sales

1130-138 GENERAL MANAGER, SERVICES(prof. & tech., n.e.c.) DPT:018
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers, organizations which provide protective services, lodging and accommodation, food and beverage, apparel and furnishings, catering, cleaning of building and other services, (Unit Group 1142):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of service management practices.
May specialize in managing a particular service field and be designated accordingly; for example,
Executive Chief, Protective Services(bus. serv.)
General Manager, Cleaning Services
General Manager, Hotel(cater. & lodg.)
General Manager, Laundry and Dry Cleaning(laund., clean. & press.)

1130-142 GENERAL MANAGER, TRANSPORT AND COMMUNICATIONS(prof. & tech., n.e.c.) DPT:018
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers, organizations concerned with the transportation of people or goods or with the transmission of communications, (Unit Group 1147):
Performs duties as described under master title, 01-090 GENERAL MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of transport or communication management practices.
May specialize in managing a particular transport or communication activity and be designated accordingly; for example,
General Manager, Telecommunications(telecom.)
General Manager, Transit System(trans., n.e.c.)
President, Broadcasting Corporation(broadcast., motion pic. & stage)

1130-199 OTHER GENERAL MANAGERS AND SENIOR OFFICIALS

This group includes general managers and senior officials, not elsewhere classified; for example, those who carry out senior management activities in business associations, political parties, trade unions, professional sport organizations and publishing enterprises. Typical examples of occupational titles covered by this residual group definition are:
Executive Director, Social Service Organization(social wel.)
General Manager, Business Association(misc. serv.)
General Manager, Employment Agencies(bus., serv.)

General Manager, Hockey Association(amuse. & rec.)
General Manager, Political Organization(misc. serv.)
General Manager, Publishing House(print. & pub.)
President, Labour Organization(misc. serv.)

1131-MANAGEMENT OCCUPATIONS: NATURAL SCIENCES, ENGINEERING AND MATHEMATICS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), in such fields as physical sciences, life sciences, architecture, engineering, mathematics, statistics, systems analysis and computer programming. Occupations in this unit group are engaged in managerial and administrative activities related to Major Group 21, OCCUPATIONS IN NATURAL SCIENCES, ENGINEERING AND MATHEMATICS.

1131-110 MANAGER, ARCHITECTURAL SERVICE(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers and supervisors, activities of department or branch concerned with architectural services:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of planning and designing of buildings and other structures.
May be designated according to type of architectural activity managed; for example,
Manager, Landscape Architecture

1131-114 MANAGER, DATA PROCESSING AND SYSTEMS ANALYSIS (prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers and supervisors, activities of department or branch concerned with electronic data processing:
Performs duties as described under master title, 01-017 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of theory and techniques of computer systems analysis and data processing operations. Oversees activities of staff engaged in analyzing data-processing needs, and problems of commercial, industrial and other enterprises; advising on the feasibility and cost of using electronic data processing; devising and introducing computer programs; and operating electronic-data-processing equipment.
May be designated according to data processing establishment managed; for example,
Manager, Data Center

1131-118 MANAGER, ENGINEERING(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate engineering supervisors, activities of department or branch concerned with various aspects of engineering:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of one or more fields of engineering; such as, chemical, civil, electrical, aeronautical or nuclear engineering. Allocates finances and personnel to various engineering projects, or contracts with consulting firms to complete portions of the work. Reviews progress, and implements administrative measures to ensure optimum profitability for organization, consistent with specified quality standards. Co-ordinates quality-control program in manufacturing operations to prevent, detect, and correct quality problems. Directs development of new engineering products and techniques, and directs investigations into new uses and adaptations of existing products and equipment produced through engineering.
May be designated according to specific engineering activity or discipline managed; for example,
Director, Engineering Quality Control Department
Director, Engineering Research and Development

Head, Aerospace Engineering
Manager, Civil-Engineering Division
Manager, Industrial-Engineering Department
Manager, Traffic Engineering

1131-122 MANAGER, LIFE SCIENCES PROGRAM(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate scientific supervisors, activities of department or branch concerned primarily with research and quality control activities in the life sciences: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of one or more life sciences, such as agriculture, biology, and pharmacology. Allocates finances and personnel to various research projects into the life sciences, reviews findings and advises senior management, medical, governmental and other officials of possible applications. Provides for inspection and testing programs in preparation of food, drugs, herbicides and related chemical and biological preparations. May be designated according to specific life science discipline or activity managed; for example, chief, Biological-Research Department Manager, Ecological Research Quality Control Director, Pharmaceuticals Manufacturing

1131-126 MANAGER, PHYSICAL SCIENCES PROGRAM(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate scientific supervisors, activities of department or branch concerned primarily with research and quality control activities in the physical sciences: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of one or more physical sciences; such as, chemistry, physics, geology and meteorology. Assigns experiments and research production work to departmental personnel. Develops and analyzes statistical data and specifications to establish required quality and reliability standards for work carried out through subordinates, and ensures that sound scientific methodology is implemented and standards are maintained. Advises senior management on implications of research, quality control and other activities pertinent to the development of new products, techniques or administrative policies. May be designated according to specific physical science activity managed; for example, Director, Agricultural-Chemistry Branch Director, Oceanographic Research Manager, Chemical-Research Division Manager, Petroleum-Geology Department

1131-130 MANAGER, MATHEMATICAL SERVICES(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through supervisory personnel, activities of department concerned with applied mathematics and research, by performing any combination of the following duties: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Applies specialized knowledge of mathematical techniques to solve problems in fields, such as science and engineering. Obtains data, using techniques, such as sampling and surveying, and applies statistical methods to calculate premiums and benefits on insurance policies and annuities. May be designated according to specific mathematical activity managed; for example, Director, Statistical Department(prof. & tech., n.e.c.) Manager, Actuarial Department(prof. & tech., n.e.c.)

1132-MANAGEMENT OCCUPATIONS, SOCIAL SCIENCES AND RELATED FIELDS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.) in fields such as economics, sociology and psychology;

social and welfare work; law and jurisprudence; library, museum and archival sciences; educational and vocational counselling and community services. Occupations in this unit group are engaged in managerial and administrative activities related to Major Group 23, OCCUPATIONS IN SOCIAL SCIENCES AND RELATED FIELDS. Supervisors of community service workers are classified in Unit Group 2333, OCCUPATIONS IN WELFARE AND COMMUNITY SERVICES.

1132-110 DIRECTOR, MUSEUM(educ.) DPT:118
gallery director.
GED: 5 SVP: 9 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls through subordinate supervisors, and within authority delegated by senior management, museum or art gallery to conserve traditions, cultivate aesthetic tastes, and provide intellectual enrichment, through research and recreational and educational activities: Performs duties as described under master title, 01-170, MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of subjects, such as museum science, painting, sculpture, history, geology, sociology, anthropology, education and the art of display. Approves, or recommends for approval, the purchase or collection of specimens, artifacts and works of art. Analyzes various programs and display projects and weighs favourable or unfavourable criticism of them as a basis for further planning or corrective action. Plans suitable programs for research and scholarly activities related to science, technology, humanities and fine arts. May provide guidance to other museums and galleries on research programs, represent museum or gallery at national or international conferences, and present learned papers. May be designated according to type of institution managed; for example, Director, Art Gallery

1132-114 DIRECTOR, LIBRARY(educ.) DPT:118
chief librarian; branch librarian.
GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through supervisory personnel, library department of organization or chain of affiliated libraries serving community: Performs duties as described under master title, 01-170, MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of library services. Establishes policy for evaluating and developing library collections. Appraises, selects and modifies procedures, or develops new methods and techniques for library operations; such as, use of automatic data processing and photocopying equipment to improve services. Reviews and evaluates orders for books, periodicals, films and phonograph records. Examines trade publications and samples, and interviews publishers' representatives to select stock for library.

1132-118 DIRECTOR, SOCIAL WORK(social wel.) DPT:118
GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate supervisors, activities within assigned regional area, or specific programs of an agency concerned with providing assistance to individuals or groups with social problems, and promoting social and recreational activities: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of diagnosis and treatment of social inadequacies; organizing and supervising social, recreational and educational activities; and soliciting financial contributions for social programs. May be designated according to particular type of social service activity, for example, Director, Children's Aid Society Director, Community Centre Director, Community Funds Director, Prisoner-Rehabilitation Society

1132-199 OTHER MANAGERS, SOCIAL SCIENCES AND RELATED FIELDS

This group includes managers, not elsewhere classified, in social sciences and related fields, who manage departments or programs; such as, those concerned with conducting research and applying principles and theories of economics to formulate plans for the solution of economic problems; studying processes through which

man makes a living; investigating and tracing origin, development and social relationships of human beings; collecting, interpreting and applying scientific data relating to human behaviour and community planning; applying principles relating to law and its administration to provide legal services, maintaining archives; and assisting individuals and groups to solve their social, economic and personal problems. Typical examples of occupational titles covered by this residual group definition are:

Chief Archivist(educ.)

Director, Anthropology Department(prof. & tech., n.e.c.)

Director, Community Planning(prof. & tech., n.e.c.)

Director, Counselling Services(prof. & tech., n.e.c.)

Director, Sociology Department(prof. & tech., n.e.c.)

1133-ADMINISTRATORS IN TEACHING AND RELATED FIELDS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.) in universities; elementary and secondary schools; technological, trades, vocational and fine arts schools; and training and instructional organizations in government, industry, private business and other agencies. Occupations in this unit group are primarily concerned with managerial and administrative activities related to Major Group 27, TEACHING AND RELATED OCCUPATIONS. Directors of athletics in an educational institution are classified in Unit Group 3710, Coaches, Trainers, Instructors and Managers, Sport and Recreation. Occupations concerned with administering major educational programs and policies at the provincial level are classified in Unit Group 1113, GOVERNMENT ADMINISTRATORS. University presidents and directors of education are classified in Unit Group 1130, GENERAL MANAGERS AND OTHER SENIOR OFFICIALS.

Administrators in Post-Secondary Education

1133-110 to 1133- 138

1133-110 ACADEMIC DEAN, UNIVERSITY OR COLLEGE(educ.) DPT:118
master, college; principal, college.
GED: 6 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through departmental or division chairmen, academic activities of university or college:

Performs duties as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of faculty or college programs. Recommends and approves faculty appointments. Determines scheduling of courses and recommends curriculum revisions and additions. Advises students on selection of major academic areas, and co-ordinates academic counselling services of teachers in faculty or college. Directs, through subordinates, staff activities, such as research program. Participates in activities of various faculty and college committees. Acts as advisor to president of university and reports directly to him.

May be appointed or elected for a specific term. May be designated according to name of college, or type of faculty administered; for example,

Dean, Faculty of Arts

Dean of Graduate Studies

Dean of Science

1133-114 DEAN OF STUDENTS(educ.) DPT:118
director of student affairs.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and co-ordinates, through various subordinate administrators, non-academic student programs in university or college:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of student programs. Participates in development of student-personnel policies, and advises staff members, such as president and registrar, on

problems relating to policy, program and administration. Directs admission of students to residence. Directs and assists in planning social, cultural and recreational programs for students. Counsels or advises students on personal and financial problems, educational and vocational objectives, and availability of student services. Sponsors and advises student organizations. Ensures that university rules are adhered to and student discipline is maintained. Prepares and administers budget for student programs. Acts as liaison official between administration and students.

May direct admissions, foreign-student services, health services, and advise student union. May teach one or more courses. May be in charge of men's activities only, or women's activities and be designated accordingly; for example,

Dean of Men

Dean of Women

1133-118 REGISTRAR, COLLEGE OR UNIVERSITY(educ.) DPT:118

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate supervisors and administrators, registration activities and academic records system of a college or university, by performing any combination of the following duties:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.) applying specialized knowledge of registration and records policies and procedures. Consults with other officials to develop program of student registration and records. Analyzes registration statistics for use in formulating policies. Interprets registration policies to faculty and students. Advises students on types of courses offered. Compiles information, such as courses, schedules and admission and graduation requirements, for publication in school calendars and bulletins. Co-ordinates class schedules with room assignments for optimum use of buildings and equipment. Directs preparation of statistical reports on educational activities for government and educational associations. Directs activities of subordinate supervisory staff and others engaged in preparing commencement lists, and in evaluating, transcribing, recording and maintaining student records and credits. Administers examinations and issues official transcripts of grades.

May direct student awards and scholarship programs. May supervise student elections.

Administrators in Elementary and Secondary Education 1133-138 to 1133-142

1133-138 SUPERINTENDENT, EDUCATION(educ.) DPT:118
academic superintendent.
GED: 5 SVP: 9 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through school principals, academic affairs of city, county or other school system, under direction of chief executive officer, by performing any combination of the following duties:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of educational policies and administration. Confers with school officials and teachers, and business, civic and other organizations to determine needs and interests of students and community. Develops and administers programs for the education and training of students, exceptional children, and adults. Directs or supervises recruitment, appointment, training, evaluation and promotion of teaching personnel. Prepares pamphlets, news releases, and other material to publicize and promote educational programs and auxiliary services, such as library service, driver education, and adult education. Analyzes data from reports, group discussions and interviews, to evaluate curricula, teaching methods and community participation in programs. Revises programs as required. Oversees guidance, psychological, transportation and other auxiliary services for students. Prepares budgets and determines allocation of funds for staff, supplies, equipment and facilities. Recommends location and size of schools and school boundaries to board of education.

May administer specific area of responsibility, depending on school system, and be designated accordingly; for example,

Director of Curriculum

Director of Instruction

Superintendent of Academic Affairs

Superintendent of Elementary Schools

Superintendent of Operations

Superintendent of Professional Development and Supervision
Superintendent of Program
Superintendent of Secondary Schools
Superintendent of Special Education
Superintendent of Student Services

1133-142 PRINCIPAL(educ.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through department heads and supervising personnel, activities of teachers, and clerical and auxiliary staff at a public, private or business school:
Performs duties as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of educational programs. Reviews programs to ensure conformance to school board and provincial standards, and develops programs within limits of authority. Co-ordinates educational activities of teaching staff by chairing meetings, making personnel assignments, preparing timetables and issuing directives. Directs or personally executes administration and clerical activities concerned with student admissions, requisitioning of supplies and equipment, school meal service, student transportation and other auxiliary services. Maintains standards of student discipline, cleanliness and general behaviour in school. Confers with teachers, students and parents on educational and behavioural matters in school. Establishes and maintains relationships with colleges, community organizations, and other schools to co-ordinate educational services. Prepares and administers school budget. Directs and co-ordinates plant maintenance services. May recruit and hire teachers. May teach one or more classes. May be designated according to level or type of school administered; for example,
Headmaster, Private School
Principal, Business School
Principal, Elementary School
Principal, Secondary School
Principal, Teachers' College

Other Administrators in Education 1133-162 to 1133-199

1133-162 DIRECTOR OF EDUCATION, PENAL INSTITUTIONS(educ.) DPT:118
director of correctional treatment and training.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through supervisors, academic, vocational and trade programs for the training of inmates in penal institutions:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of training and education. Visits classrooms and workshops to examine facilities and to observe and advise instructors on methods and techniques. Participates in development of departmental policies and guidelines. Assists in preparation of special courses to aid in rehabilitation process. Institutes and directs, through subordinates, vocational and trade training programs for development of work habits and skills. Evaluates effectiveness of programs through follow-up studies, discussions and instructors' reports, and institutes changes as required. Prepares and administers program budgets.
May direct social education and chaplain services in penal institutions. May be employed by either federal or provincial governments and be designated accordingly; for example,
Director of Education, Federal Penal Institutions
Director of Education, Provincial Penal Institutions

1133-166 DIRECTOR, SCHOOL OF NURSING(educ.; medical) DPT:118
director, nursing education.
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through supervisors and administrators, classroom instruction, clinical experience, counselling, accommodation and recreation for students in school of nursing:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of nursing education. Defines or interprets aims and policies of school. Establishes or participates in establishing qualifications for faculty, staff and students, and in recruiting eligible candidates. Plans or

directs planning of curriculum and schedule of instruction. Develops standards of conduct for students and maintains discipline through subordinates. Arranges for students to receive clinical experience in hospitals and other institutions and agencies. Provides a system for maintaining current records of students' educational experience and achievements. Prepares or assists in preparing school budget and administers approved budget. Ensures that students have adequate living accommodation, and social and recreational opportunities. Advises educational groups on entry requirements for school of nursing.

1133-170 DIRECTOR, SCHOOLS FOR THE DEAF OR BLIND(educ.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate school superintendents, activities of provincial and other institutions to facilitate educational, vocational and social development of the deaf or sightless:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of training programs, capabilities and opportunities available to blind and deaf persons. Directs, through school superintendents, activities of personnel engaged in training blind or deaf persons. Consults with representatives of civic groups and community organizations to co-ordinate programs and services for the blind and deaf, and recommends changes in legislation or policy. Represents provincial authorities at conventions, and addresses public gatherings to promote understanding of problems and to familiarize public with activities of institutions for the blind and deaf. Inspects teaching institutions to ensure effectiveness of programs.

1133-199 OTHER ADMINISTRATORS IN TEACHING AND RELATED FIELDS

This group includes administrators in teaching and related fields, not elsewhere classified; for example, those who administer training programs for government officers and staff, such as manpower counsellors, air traffic controllers and meteorological technicians; those who administer programs for the education of the Indian and Eskimo population of Canada; direct education programs for labour unions and professional associations; direct institutes for studies into education; and administer religious education programs in seminaries, theological colleges, divinity schools and similar institutions. Typical examples of occupational titles covered by this residual group definition are:

Chief, Staff Training and Development(educ.; gov. serv.)
Director, Membership Education(educ.)

1134-ADMINISTRATORS IN MEDICINE AND HEALTH

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), in health service areas of hospitals, industries, clinics, government health agencies, and similar establishments; dietetics; volunteer services; and admission and discharge of patients from hospitals. Managers in federal and provincial governments engaged in health policy making are classified in Unit Group 1113, GOVERNMENT ADMINISTRATORS. Health inspectors are classified in Unit Group 1116, INSPECTORS AND REGULATORY OFFICERS, GOVERNMENT. Non-managerial government health officers are classified in Unit Group 1119, OFFICIALS AND ADMINISTRATORS UNIQUE TO GOVERNMENT, N.E.C. Hospital administrators are classified in Unit Group 1130, GENERAL MANAGERS AND OTHER SENIOR OFFICIALS.

1134-110 DIRECTOR OF DIETETICS(prof. & tech., n.e.c.)
DPT:118
chief dietician.
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Plans, organizes, directs and controls through subordinate dietitians activities of department providing regular and special diets in hospitals and similar institutions:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Directs purchasing, recipe development, menu planning, food preparation and service, safety practices, sanitation standards and personnel utilization. Co-ordinates operation of catering and other food service units. Advises senior management on matters pertaining to dietetics.

1134-114 DIRECTOR, OCCUPATIONAL HEALTH(medical)
DPT:118
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Plans, organizes, directs and controls through subordinate supervisors regional nursing services in industrial or commercial establishments employing registered nurses:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Consults with management, medical director and legal counsel to plan desired scope and objectives of nursing service in employee-health program. Plans and arranges for staff in-service education, staff participation in professional organizations, and attendance at workshops, seminars and advanced education courses. Provides for health counselling and health education on individual or group basis. Advises personnel in the selection, improvement and maintenance of physical facilities, equipment and supplies. Integrates nursing activities into the safety, industrial hygiene, sanitation and other health and welfare services within the company.

1134-118 DIRECTOR, NURSING SERVICES(medical)
DPT:118
assistant administrator, nursing.
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate supervisors total nursing program in hospitals, nursing homes or extended-care facilities:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Recommends new and revised policies, and standards of performance for nursing department. Appoints professional and auxiliary nursing staff. Provides nursing advice to organizations which offer volunteer services for the sick.

1134-122 DIRECTOR, PUBLIC-HEALTH NURSING(medical)
DPT:118
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate supervisory personnel, public-health nursing program to meet needs of a community:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of environmental health conditions, social welfare problems and availability of community services. Develops and promotes health programs to prevent disease and disability of individuals, families and entire community. Provides visiting-home-nursing care for non-hospitalized sick and disabled persons. Co-ordinates services of nursing team to ensure continuity of patient care. Organizes and directs activities of clinics engaged in immunizations, maternal and child-care, and other health services. Advises university and community-college schools of nursing, and other educational institutions, in regard to the preparation of public-health nurses to meet current and foreseeable community health needs. Initiates and participates in research on nursing and other services.

1134-126 DIRECTOR, THERAPEUTIC SERVICES, PSYCHIATRIC HOSPITAL(medical)
DPT:118
administrator, therapeutic services.
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate supervisors, administration of vocational, social, recreational and other remedial programs in psychiatric hospital:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Evaluates effectiveness of programs designed to assess vocational aptitudes to apply specific therapeutic techniques aimed at improving patient's mental health and employability. Consults with heads of vocational, occupational therapy, social service, psychological and recreational departments in developing effective treatment programs. Confers with interested agencies concerning vocational, social and recreational activities suitable for patients. Determines hours of work for patients and ensures that remuneration is commensurate with performance. Arranges sufficient free time for required activities of patients.

1134-130 DIRECTOR, VOLUNTEER SERVICES(medical)
DPT:118
GED: 5 SVP: 7 EC: I PA: L 5 6 7

Plans, organizes, directs and controls, through subordinate supervisors activities of volunteer workers to provide supplemental services to hospital and patients:

Provides for securement of volunteer workers. Organizes classes of instruction, and orientation programs for volunteers to teach proper procedures and techniques and hospital regulations and acquaint them with working arrangements. Discusses with hospital administrative personnel, how and where volunteer workers can work to provide the best service for hospital and patients. Directs assignment of workers, usually to area of their choice; such as, admitting department, library, clinics, pharmacy, occupational therapy, coffee and gift shops. Directs maintenance of adequate stock of food supplies and commodities to operate canteens and gift shops efficiently. Ensures that carts, taken by volunteers to various areas of hospital with commodities for patients, are checked for cleanliness, arrangement, assortment and display.

1134-134 DIRECTOR, ADMITTING DEPARTMENT(medical)
DPT:137
director, admissions.
GED: 4 SVP: 7 EC: I PA: L 4 5

Plans, organizes, directs and controls, through subordinate supervisors activities of hospital department responsible for admitting and discharging patients:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of availability of hospital-bed space, nature of illness and admittance specifications. Directs training of staff in procedures to be followed in admitting and discharging patients, hospital routine, interpretation of hospital and medical insurance, and related duties; and administers day-to-day operations.

1134-199 OTHER ADMINISTRATORS IN MEDICINE AND HEALTH

This group includes administrators in medicine and health, not elsewhere classified; for example, those who plan, organize, direct and control, through subordinate supervisors, activities of workers engaged in operating first-aid centres, Red Cross clinics and similar establishments. Typical examples of occupational titles covered by this residual group definition are:

Clinic Director(medical)
Director, First-Aid(medical)

1135-FINANCIAL MANAGEMENT OCCUPATIONS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), in banks, credit agencies, investment companies, or similar financial institutions; and in departments within industrial, commercial, government or other organizations concerned with financial management. Activities include: advising officials on credit and investment policies, and negotiating with financial or other institutions on matters affecting the general policy of the organization.

1135-110 COMPTROLLER(prof. & tech., n.e.c.) DPT:118
controller; treasurer.
 GED: 5 SVP: 9 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through subordinate managers or supervisors, financial affairs of industrial, commercial institutional, or governmental organizations:
 Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of accounting, and financial management. Directs, through subordinates, activities, such as preparing advisory reports to management on financial analysis of operations; summarizing establishment's financial position in areas of income, expenses and earnings; preparing budgets and financial forecasts; calculating depreciation on capital items within permissible limits; evaluating requirement for funds and investment of surplus; and developing policies and procedures for account collection. Advises management on implications resulting from changes in taxation. Inspects records and conducts audits to evaluate efficiency of related department.

1135-114 MANAGER, BANK(bank. & finance) DPT:118
 GED: 5 SVP: 9 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers or supervisors, banking activities in head office department, regional territory or branch of chartered bank:
 Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of banking activities:

Ensures established operating policies and procedures are carried out in respect to: accepting of deposits from the public, making of loans for business, agriculture and consumer requirements, selling of securities, dealing in foreign exchange, providing of safekeeping facilities and receiving and paying out of cash. Advises bank clients regarding investment and other monetary affairs and sound business practices. Approves grants or declines loans to bank customers within limits laid down by Head Office. Ensures that sufficient collateral is held regarding authorized lines of credit. Studies organization, operation and financial background of local industries to be in a position to assess any future requests for lines of credit. Develops and recommends plans for new forms of lending activity or program expansion. Investigates and settles customer complaints regarding service, and participates in various community activities to promote services offered by bank.

May be concerned with a specific area of bank management and be designated accordingly; for example,
 Branch Manager, Bank
 Investment Department Manager
 Regional Manager, Bank

1135-118 MANAGER, TRUST COMPANY(bank. & finance) DPT:118
 GED: 5 SVP: 9 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through subordinate managers or supervisors, the trust and related activities of a head office department, regional territory or branch of trust company:
 Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of trust business and related principals of accounting and law. Directs administration of trusts, settlement of estates, and other company activities, such as management of real and personal property, lending of money on mortgages, accepting of funds for deposit, operating of investment funds, transferring of shares, disbursement of dividends and bond interest, and sale and valuation of real estate and businesses. Directs business development personnel in seeking out clients and selling company services.

May be concerned with a specific area of activity and be designated accordingly; for example,
 Branch Manager, Trust Company
 Investments Manager, Trust Company
 Manager, Personal Trust

1135-122 CREDIT MANAGER(prof. & tech., n.e.c.) DPT:118
manager, credit and collection department.
 GED: 5 SVP: 8 EC: 1 PA: S 4 5 6

Plans, organizes and controls, through subordinated managers or supervisors, activities of credit department of an industrial, commercial or similar establishment:
 Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge in the fields of accounting and financial management. Directs activities of credit department, such as investigation of financial standing and reputation of credit applicants, establishment of credit limitations, approval or rejection of credit applications, provision of customer information service, account-adjustment, maintenance of credit records, and collection of overdue or delinquent accounts. Co-operates with advertising department to promote use of credit by the public.

1135-126 MANAGER, CREDIT UNION(bank. & finance) DPT:118
 GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinates at a supervising level or above, branch or regional operations of a credit union:
 Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge in accounting, bookkeeping and operation of credit-union. Directs banking and loan activities of credit union through subordinate officials. Confers with board of directors to clarify or implement policy decision. Maintains custody of records, registers and securities. Prepares monthly and year-end financial statements and presents and explains these at membership meetings. Explains credit-union policy, and loan and other documents to credit-union members or prospective members.

1135-199 OTHER FINANCIAL MANAGEMENT OCCUPATIONS

This group includes financial managers, not elsewhere classified; for example, those who plan, organize, direct and control, through subordinates at a supervisory level or above, the departmental, divisional or regional activities of organizations such as mutual fund or syndicated-investment companies and benevolent societies. Typical examples of occupational titles covered by this residual group definition are:

Investment Manager, Mutual Fund(bank. & finance)
 Manager, Underwriting Department(insur. & real estate)

1136-PERSONNEL AND INDUSTRIAL RELATIONS MANAGEMENT OCCUPATIONS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.) in the fields of personnel and industrial relations. Activities include: participating in establishing employee-relations policies; directing the selection, training and evaluation of employees; administering employee benefit, safety and recreation programs; developing wage and salary schedules; co-ordinating collective bargaining activities or other negotiations, and advising in the administration of labour agreements. Occupations in this unit group are engaged in managerial and administrative activities primarily related to Unit Group 1174, PERSONNEL AND RELATED OFFICERS. Public relations officers are classified in Unit Group 1179, OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION. N.E.C. Public relations managers are classified in Unit Group 1137, SALES AND ADVERTISING MANAGEMENT OCCUPATIONS.

1136-110 INDUSTRIAL-RELATIONS MANAGER(prof. & tech., n.e.c.) DPT:118
 GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through subordinate managers or supervisors employee-employer relations activities of an industrial, commercial, or other organization:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of labour-management relations. Implements, co-ordinates and participates in establishing policies and procedures concerning job classification, wage and salary administration, working conditions, labour relations and other industrial relations matters. Confers with workers' representatives to settle labour-relations problems. Participates in collective bargaining negotiations or advises company representatives. Maintains effective working relationships with union representatives, and federal and provincial officials. Advises and assists other departmental managers on interpretation and administration of labour agreements and policies.

May co-ordinate personnel-administration activities; such as, recruitment, testing, selection, placement, promotion and training. May represent establishment before industrial arbitration courts or labour tribunals. May manage a particular field of industrial-relations work and be designated accordingly; for example, Employee-Relations Manager
Manager, Wage and Salary-Administration

1136-114 PERSONNEL MANAGER(prof. & tech., n.e.c.)

DPT:118

GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through subordinate managers or supervisors personnel activities of an industrial, commercial or other organization:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of personnel administration. Implements and co-ordinates recruitment, testing, selection, placement, training, promotion, transfer and employee development programs. Advises and assists other departmental managers on interpretation and administration of personnel policies and programs. Administers employee benefits programs; such as, health, recreation, safety, leave, insurance, and other personnel services. Participates in new employee orientation and induction activities and conducts interviews.

May co-ordinate and participate in industrial-relations activities; such as, collective bargaining negotiations, employee relations and wage and salary administration. May manage a particular area of personnel work and be designated accordingly; for example,

Employment Manager
Personnel-Services Manager
Personnel-Training and Development Manager

1137-SALES AND ADVERTISING MANAGEMENT OCCUPATIONS

This unit group includes occupations in managerial and administrative work, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), concerned with sales, advertising and public relations activities in industrial, commercial, advertising or other establishments. Managers in this unit group direct the activities of advertising, sales and public relations departments of large organizations or manage advertising agencies belonging to a chain of such establishments. General managers of chains of department stores are classified in Unit Group 1130, GENERAL MANAGERS. Working proprietors and managing supervisors of stores and service establishments and supervisors of departments in stores are classified in Major Group 51, SALES OCCUPATIONS and Major Group 61, SERVICE OCCUPATIONS.

1137-110 MANAGER, ADVERTISING(prof. & tech., n.e.c.)

DPT:118

director, advertising.

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, activities of department, agency or branch engaged in advertising and promoting products and services of companies or other organizations:

Confers with senior management and heads of departments to determine advertising needs and budgetary requirements. Directs research activities concerning information and statistics relative to the planning and execution of advertising and sales promotion programs,

including market potential, competitors' activities, and general economic conditions and forecasts. Confers with senior management of all advertising media; such as, billboards, radio, television and magazines, and approves contracts for type of advertising decided upon. Reviews and approves program before release. Confers with manufacturing personnel to co-ordinate production of new products or packaging with advertising or promotional programs. Authorizes release of information and determines when programs will start and end. Receives and evaluates reports concerning the overall effect of the advertising programs. Directs advertising and promotional activities through subordinate supervisory personnel.

May manage promotional activities, other than sales, such as those concerning services organizations, people and environmental conditions and be designated accordingly,
Manager Promotions

1137-114 DIRECTOR, PUBLIC RELATIONS(prof. & tech., n.e.c.)

DPT:118

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, activities of department of non-governmental organization or agency that evaluates public attitudes, identifies the policies and procedures of an individual or organization with the public interest, and that executes programs designed to earn public understanding and acceptance:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Directs and co-ordinates efforts to develop a public-relations policy for entire organization for approval of chief executive. Administers approved policy and program throughout organization, and informs, guides, assists or directs all concerned with carrying out activities. Directs preparation, release and distribution of publicity conforming with established policies. Develops and maintains effective relations with press, broadcast and other mass-communications media. Oversees arrangements for interviews between executives and representatives of the media. Reviews and approves public statements and speeches, broadcast scripts and articles, films and pictures prepared for organization conforming with established policies and suggests necessary changes. Reviews and approves, from public relations standpoint, all company advertising and sales promotion programs. Confers with associates in industrial relations concerning issuance of printed information to employees on the organization and all its activities, and on matters of general interest. Advises on selection of outside public relations counsel as needed and supervises and appraises performance of such counsel. Recommends trade, professional and service organizations in which the organization should participate, and proposes the name of best qualified employees to represent organization in these outside activities.

May serve as corporate contact with organizations soliciting advertising or financial support of charitable or civic undertakings. May supervise editing, publication and distribution of employee newspaper or magazine.

1137-118 MANAGER, SALES(prof. & tech., n.e.c.)

DPT:118

director, sales.

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, sales activities for industrial or commercial organizations or for chains of retail and wholesale businesses:

Directs various activities of sales department, through managerial or supervisory staff, reporting to senior management respecting all phases of sales. Co-ordinates sales distribution function by approving establishment of sales territories, quotas, and objectives. Confirms assignment of sales territories to salesmen. Evaluates dealer-sales reports and approves dealer-assistance programs, such as training and sales promotion programs. Reviews market analyses to determine customer needs, potential volume, price schedules, discount rates and competitive operations, and develops sales campaigns to meet company goals. Contacts volume purchasers personally to influence sales.

May, in co-operation with other senior management, recommend and approve budget expenditures and appropriations for research and development work. May negotiate with advertising agencies concerning the preparation of sales advertising, and approve material before publication. May specialize in managing a particular sales function depending on the nature and size of the organization and be designated accordingly; for example,

Manager, Agency Marketing Department

Manager, Bulk Plant(oil & nat. gas)
Manger, Circulation(print. & pub.)
Manager, Distribution
Manager, Export Sales
Manager, Marketing
Superintendent of Agencies

1137-199 OTHER SALES AND ADVERTISING-MANAGEMENT OCCUPATIONS

This group includes other sales and advertising managers, not elsewhere classified; for example those who perform a combined sales advertising or public relations function. A typical example of an occupational title covered by this residual group definition is:
Sales and Advertising Manager(any ind.)

1141-PURCHASING MANAGEMENT OCCUPATIONS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), in the field of purchasing materials, products or services in government, industry, business and other agencies. Non-managerial purchasing officers, who buy material for internal use in an organization or institutions, are classified in Unit Group 1175, PURCHASING OFFICERS AND BUYERS, EXCEPT WHOLESALE AND RETAIL TRADE. Non-managerial buyers who purchase commodities for resale are classified in Unit Group 5191, BUYERS, WHOLESALE AND RETAIL TRADE.

1141-110 MANAGER, MERCHANDISE PURCHASING(ret. trade; whole. trade) DPT:118
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, purchase of commodities for resale in retail or wholesale establishments:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of purchasing operations. Analyzes reports of sales and market research to determine mark-up and mark-down percentages necessary to ensure profit, based on estimated budget, profit goals and average rate of stock turnover. Determines amount of merchandise to be stocked, and directs buyers in purchasing supplies of commodities for resale. Keeps sales and warehousing departments informed of current merchandising activities.
May be designated according to commodity purchased for resale; for example,
Manager, Clothing Purchasing
Manager, Electronic-Components Purchasing
Manager, Food Purchasing
Manager, Hardware Purchasing

1141-114 MANAGER, PURCHASING(prof. & tech., n.e.c.) DPT:118
purchasing manager, materiel and services.
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, purchasing and distribution of raw materials, equipment, services and supplies, for processing or internal use, in industrial, commercial or government establishments:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of raw materials and commodity purchasing procedures. Analyzes market and delivery conditions to determine current and future availability of material, and prepares market-analysis reports. Directs purchasing of materiel at lowest cost, consistent with quality standards and delivery requirements. Reviews and approves contracts, purchase orders and invoices. Negotiates with suppliers to resolve problems on prices, deliveries or specifications. Arranges for disposal of surplus material. May be designated according to commodity purchased; for example,
Manager, Building Supplies Purchasing
Manager, Office Equipment Purchasing

1142-SERVICES MANAGEMENT OCCUPATIONS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), in organizations which provide private protective services, lodging and other accommodation, food and beverage, apparel and furnishing, building and cleaning and other services. Occupations in this unit group are engaged in managerial and administrative activities related to Major Group 61, SERVICE OCCUPATIONS. Managers of entire chains of service establishments are classified in Unit Group 1130, GENERAL MANAGERS AND OTHER SENIOR OFFICIALS. Working proprietors and salaried supervisors of organizations which provide the above-mentioned services are classified in Major Group 61, SERVICE OCCUPATIONS. Fire marshals and police commissioners are classified in Unit Group 1113, GOVERNMENT ADMINISTRATORS.

1142-110 HOTEL MANAGER(cater. & lodg.) DPT:118
GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managerial and supervisory personnel, one of a chain of large departmentalized hotels:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of hotel operation. Directs and co-ordinates services and activities necessary for successful operation of hotel; such as, lodging, food, beverage, personnel, sales and accounting, publicity, and banquet and convention facilities. Institutes and implements policies on matters; such as, personnel practices, credit allowances, room and other rates, departmental jurisdiction, and type of service offered. Develops programs for guests; such as, music and entertainment, tours, and sports and recreation. Negotiates provision of space and facilities in hotel for services; such as, shop concessions, conventions, banquets, and social gatherings. Oversees purchase of equipment and supplies. Analyzes cost, sales and other data to determine hotel's financial situation. Studies trends in hotel management, and institutes measures to improve service and efficiency of hotel. Takes part in community affairs and confers with business and civic leaders to promote business.
May specialize in managing a specific type of hotel, such as commercial, residential, or resort hotel.

1142-114 MANAGER, FOOD AND BEVERAGE(cater. & lodg.) DPT:118
maitre d'hotel.
GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through supervisory personnel, operations of food and beverage facilities of large hotels or restaurants to ensure efficient and profitable service:
Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of food and beverage services. Negotiates arrangements with clients for use of facilities. Plans and directs dining room, bar, and banquet operation and establishes food policies and type of service to be offered. Directs departments engaged in preparing and serving food and beverages. Analyzes operating costs and other data; such as, procurement, preparation, and sale of food and beverages, to ascertain distribution of costs amongst various departments. Determines payroll and operating costs, and establishes food and beverage prices to ensure profitable operation. Analyzes market conditions for supplies, and investigates acceptance of substitute food products to control food costs. Resolves complaints concerning food and service. Studies trends in food and beverage services, by visiting other establishments, and attending conventions and meetings of trade associations.

1142-118 DISTRICT MANAGER, PRIVATE INVESTIGATION AND SECURITY SERVICE(bus. serv.) DPT:118
GED: 4 SVP: 8 EC: B PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers and supervisors, regional operations of country-wide organization, providing commercial and private investigating and protective services:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), utilizing specialized knowledge of principles and techniques related to private investigative and protective work. Negotiates contracts to provide services, on a fee basis; such as, conducting private investigations, tracing missing persons, investigating irregularities relating to fire, and intrusions, maintaining order at public gatherings, and protecting private property against theft and malicious damage. Monitors activities of branch offices, and provides information and assistance required to meet objectives. Prepares reports for record and control purposes. Maintains effective working relationship with clients, law-enforcement and other related agencies.

1142-122 AREA MANAGER, LAUNDRY AND DRY CLEANING (laund., clean. & press.) DPT:118
GED: 4 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, area operations of dry cleaning and laundry branches:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of laundry and dry cleaning services. Directs operation of laundry and dry cleaning branches in assigned area in accordance with established policies, and procedures. Reviews financial statements and takes action where indicated to ensure efficient and profitable operations. Plans and directs program to stimulate business, using sales aids and advertising facilities. Investigates possibilities for additional laundry and dry cleaning outlets.

1142-126 BRANCH MANAGER, JANITORIAL SERVICES (misc. serv.) DPT:118
GED: 4 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls through supervisory personnel activities of local branch of firm providing janitorial building-cleaning services:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of janitorial services for industrial, commercial and residential buildings. Directs sales staff and assists in negotiating contracts for janitorial services. Directs operations of unit through subordinate supervisors to provide building cleaning services according to contract provisions. Investigates current developments in cleaning techniques, machines and materials and selects those appropriate to modern janitorial services. Resolves customers' complaints. Conducts studies to improve efficiency and cost of janitorial services. Prepares reports and returns for record and control purposes.

May manage railway rolling stock or other vehicle and aircraft cleaning service and be designated accordingly.

1142-199 OTHER SERVICES MANAGEMENT OCCUPATIONS

This group includes services managers, not elsewhere classified; for example, those who manage operations of large health studios, or travel agency branches. Typical examples of occupational titles covered by this residual group definition are:

Area Manager, Travel Agencies(pers. serv., n.e.c.)
Manager, Health Studio(amuse. & rec.)

1143-110 MANAGER, FOOD AND BEVERAGE PRODUCTION (prof. & tech., n.e.c.) DPT:118
food production manager.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or foremen, activities of one or more production or processing departments of organizations producing food, beverages or other products intended for human or animal consumption:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of management and production techniques in organizations where edible products are cleaned, treated or processed and packaged for distribution to consumers. Contracts for crops or produce, or notifies purchasing department or field-men of produce requirements. Directs change-over of equipment and processing methods, according to crop season or product demand. Examines incoming produce and other raw materials or ingredients for quality, or reviews results of physical and chemical analyses. Determines processes to be used, in conjunction with research personnel, or modifies existing formulas as a result of tests. Reviews and correlates results of quality control analyses, and prepares and submits production reports. Studies new equipment and processing techniques and makes recommendations regarding equipment requirements or replacements.

May co-ordinate activities of several subsidiary food processing plants or mills. May manufacture a particular food product or be concerned with a specific production process, and be designated accordingly; for example,

Brewmaster (distill., brew. & ferment)
Cannery Manager (can. & preserv., n.e.c.)
Manager, Fish Plant (fish process.)
Manager, Pickling Plant (can. & preserv., n.e.c.)
Mill Manager (feed & flour mill)
Wine Maker (distill., brew. & ferment.)

1143-114 MANAGER, INDUSTRIAL AND MANUFACTURING PRODUCTION (prof. & tech., n.e.c.) DPT:118
production manager.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or foremen, activities of one or more production departments of an organization producing industrial or manufactured products:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of management and industrial production techniques. Assesses production requirements in relation to plant capacity and performance, manpower availability, materials supply and financial limitations. Formulates program, through subordinates, making time and cost estimates and determining materials and tooling schedules. Establishes routine maintenance procedures for plant equipment and assesses machine efficiency to make projections of output capability. Studies equipment developments and improved manufacturing techniques, and makes recommendations regarding replacement of machines and rectification of plant-maintenance problems. Devices inspection programs to control quality, and develops production reporting procedures.

May assist engineering and design departments to develop changes to improve product quality and reliability, or that adapt product to permit manufacturer to utilize existing facilities or techniques. May manufacture a particular product or be concerned with a specific process or aspect of production and be designated accordingly; for example,

Manager, Car Production(rail. rolling stock)
Manager, Foundry(iron & steel)
Manager Production, Automobile Soft-Trim(motor vehicle)
Quality Control Manager
Tool Department Manager(mach., weld. & forg.)
Works Manager(struct., plate & ornam. metal)

1143-118 MANAGER, RAW-MATERIALS PRODUCTION(prof. & tech., n.e.c.) DPT:118
production manager, raw materials.
GED: 5 SVP: 8 EC: B PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, activities at one or more mining, quarrying, drilling or logging sites, or other operations of organization for the extraction or

1143-PRODUCTION MANAGEMENT OCCUPATIONS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), such as directing and co-ordinating production departments, divisions or other organizational units, through subordinate managers and supervisors, in an industrial, commercial, governmental or other organization.

acquisition of raw materials used by manufacturing or processing industries:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.) applying specialized knowledge of production management and techniques. Confers with owners or other management groups to plan objectives or production quotas. Studies operational site, determines availability of manpower and equipment, plans operations, and directs adjustments to work schedules and procedures. Ensures that applicable safety regulations are enforced.

May direct activities concerned with pre-processing of raw materials, such as separating, crushing or concentrating mineral ores for shipment. May direct building activities, such as construction of access roads. May be designated according to activity managed or material extracted, for example,

Manager, Peat Bog(mining & quarrying)

Production Manager, Coal Mining(mining & quarrying)

Production Manager, Logging(forest, & log.)

Production Manager, Oil and Gas Fields(oil & nat. gas)

1145-MANAGEMENT OCCUPATIONS, CONSTRUCTION OPERATIONS

This unit group includes occupations concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), in organizations which are engaged in construction, major alteration, maintenance of repair of structures, facilities and systems; such as, dwellings, business places, factories, highways, railways, dams, bridge, airports, and docks. Activities include: preparing specifications and estimates of costs, placing orders for materials, hiring or contracting for the employment of men and machines; overseeing projects to ensure that specifications are met, time schedules maintained, and safety regulations observed; and reporting and consulting on construction activities. Occupations in this group are engaged in managerial and administrative activities primarily related to Major Group 87, CONSTRUCTION TRADES OCCUPATIONS. Owners of small construction-contracting organizations who also perform duties similar to workers supervised; such as paving, pipefitting, electrical construction and roofing are classified in the supervisory unit groups of Major Group 87, CONSTRUCTION TRADES OCCUPATIONS. General managers of large construction-contracting organizations are classified in Unit Group 1130, GENERAL MANAGERS AND OTHER SENIOR OFFICIALS.

1145-110 CONSTRUCTION MANAGER(construction)

DPT:118

GED: 5 SVP: 8 EC: B PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers and supervisors, activities of department concerned with preparing estimates for, and constructing buildings, highways, railways, bridges, canals, oil and gas lines, airports and other construction projects:

Performs duties as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), using specialized knowledge of the financial, administrative, technical and other managerial aspects applicable to construction projects. Estimates cost of construction from working drawings and specifications and submits tender. Arranges with banks or other parties to provide financial assistance. Completes contract documents on successful tenders, to define contract conditions, such as work to be performed, materials required, financial considerations, and time limitations. Directs purchase of material for construction. Subcontracts for construction activities; such as, excavating, cement work, steel erection, plumbing and wiring. Prepares and implements timetable to schedule operations, using inspection reports, charts, and computer. Co-ordinates and controls construction operations through subordinate supervisors to accomplish construction project according to terms of contract.

May be designated according to particular construction work in which engaged, for example,

Engineering-Construction Manager

Excavations Manager

Highway-Construction Manager

Industrial-Building Construction Manager

1145-114 CONSTRUCTION

SUPERINTENDENT(construction)

DPT:118

site superintendent.

GED: 5 SVP: 8 EC: B PA: L 5 6 7

Plans, organizes, directs and controls, through subcontractors and foremen, construction of buildings, highways, railways, bridges, canals, oil and gas lines, airports and other construction projects, under general direction of contractor or construction manager:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of construction management matters; such as, contracts, building codes and standards, construction materials and operations, and building trade methods. Studies plans and specifications and time schedule, and visits work site to determine nature and extent of construction project. Plans and institutes procedures to monitor construction progress in relation to planned time schedule, through inspections, progress reports, charts or computers. Consults with owners, architect, material suppliers, subcontractors, and work force to discuss or convey information and instructions relevant to project. Directs supervisory personnel and subcontractors engaged in planning and executing work procedures, interpreting specifications, and co-ordinating various phases of construction to prevent delays. Meets with supervisory personnel and labour representatives to resolve complaints and grievances and promote good relations with work force. Directs inspection activities, or personally inspects construction work to ensure that workmanship and materials comply with specifications and federal, provincial or municipal regulations. Monitors safety program for project to provide adequate precautions against injury to personnel or damage to property. Prepares, or receives from subordinates, progress, financial and other reports for record and control purposes.

May be concerned with major maintenance or reconditioning projects. May be designated according to type of project managed; for example,

Building-Construction Superintendent

Engineering-Construction Superintendent

Superintendent, Bridge Construction

Superintendent, Pipe-Line Construction

Superintendent, Railway Construction and Maintenance

1147-MANAGEMENT OCCUPATIONS, TRANSPORT AND COMMUNICATIONS OPERATIONS

This unit group includes occupations in managerial and administrative work, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), concerned with transporting people or goods or transmitting and receiving communications. Transport activities in this unit group include managing the movement of persons or materials by air, highway, railway, water and pipeline and the management of airports, harbours, and railway and busline terminals. Communications activities in this unit group include managing the transmitting and receiving of information through telephone, telegraph and broadcast systems. Occupations in this unit group are engaged in managerial and administrative activities primarily related to Major Group 91, TRANSPORT EQUIPMENT OPERATING OCCUPATIONS; Minor Group 953, STATIONARY ENGINE AND UTILITIES EQUIPMENT OPERATING AND RELATED OCCUPATIONS; and Minor Group 955, ELECTRONIC AND RELATED COMMUNICATIONS EQUIPMENT OPERATING OCCUPATIONS, N.E.C.

Transport Management Occupations

1147-110 through 1147-142

1147-110 MANAGER, AIRLINE(air trans.)

DPT:118

airline superintendent, division.

GED: 5 SVP: 8 EC: I PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, operations of airline company within geographic division, to ensure efficient handling of freight and passenger traffic and utilization of personnel and equipment:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of airline

operations. Reviews and analyzes reports of aircraft movements, operating costs, and passenger and freight loads, and directs or recommends changes to increase revenue and efficiency or reduce costs. Reviews company operations to ensure conformance to governmental regulations. Interprets labour-management agreements to resolve or prevent labour-relations problems.

1147-114 MANAGER, MOTOR TRANSPORT(motor trans.) **DPT:118**

GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, operations of motor freight or busline company within geographic division, to ensure efficient handling of freight and passenger traffic and utilization of personnel and equipment: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of motor freight or busline operations. Reviews and analyzes reports on rates, tariffs, schedules, routes, expenses and revenues, and directs or recommends revisions to increase revenue and efficiency and to lower costs. Reviews union contracts, and employment and governmental regulations, to ensure conformance to regulations and to recommend changes as required. Co-ordinates accident investigations, reviews reports of complaints and traffic delays, and orders corrective action. Co-ordinates repair and maintenance of equipment and facilities, and recommends new capital investments as required. Directs ticket sales, janitorial work and public relations activities in company-operated bus terminals within assigned territory. May specialize in the transportation of either passengers or freight and be designated accordingly.
Manager, Bus Company
Manager, Freight Company

1147-118 MANAGER, RAILWAY(rail trans.) **DPT:118**
area manager; general agent; railway superintendent, division.

GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, operations of railway company within geographic division, to ensure efficient handling of freight and passenger traffic and utilization of personnel and equipment: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of railway-transport-system operations. Reviews and analyzes reports of train movements, emergency changes in schedules, accidents and weather conditions, and directs or recommends changes or corrective action. Ensures trains within assigned territory operate safely and according to established rules and regulations. Co-ordinates repair and maintenance of equipment and facilities including track, bridges, buildings and rolling stock and recommends new capital investments as required. Directs maintenance of records concerning train movements. Co-ordinates through subordinates parcel post, passenger and freight sales units and other operations of train terminals within jurisdiction. Interprets labour-management agreements to resolve or prevent labour-relations problems. May specialize in the transportation of either freight or passengers and be designated accordingly; for example,
Freight Manager, Railway
Passenger Manager, Railway

1147-122 MANAGER, URBAN TRANSIT SYSTEM(motor trans.) **DPT:118**
superintendent of transportation.

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through supervisors, operations of urban transit system: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of urban transit operations involving any combination of bus, streetcar, subway or other urban train services. Recommends and implements revisions in schedules, change of routes, and driver allocation to improve service and increase revenue. Co-ordinates production of new or revised schedules. Directs dispatching functions and inspection of vehicle operations. Issues procedure manuals, technical guides and bulletins, to instruct personnel and to improve driving, dispatching and loading and unloading of vehicles. Participates in training programs such as driver-training and safety. Directs collection of cash from fare boxes,

and associated bookkeeping activities. Reviews logs, and time cards, and discusses problem areas with drivers. Schedules operators and vehicles for charter or sightseeing runs. Co-operates with personnel and equipment managers regarding hiring of employees, and vehicle maintenance activities. Maintains liaison with police department on traffic problems and with city officials concerning sanding and snow removal operations.

1147-126 MANAGER, WATER TRANSPORT(water trans.) **DPT:118**

GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, operations of water-transportation company within geographic division, to ensure efficient handling of freight and passenger traffic and utilization of personnel and equipment: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of water-transportation-system operations. Co-ordinates repair and maintenance of water-transport equipment and facilities, and recommends new capital investments as required. Reviews reports of customer complaints, and orders corrective action. Interprets labour-management agreements to resolve or prevent labour-relations problems.

1147-130 AIRPORT MANAGER(air trans.) **DPT:118**

GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate managers or supervisors, airport operations, in accordance with governmental regulations and policies laid down by senior management: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of flight, maintenance, security, fire prevention, rental and other airport operations and regulations. Reviews fire prevention, security, maintenance and other procedures to ascertain adequacy of provisions, and recommends improvements for safety and protection. Recommends landing and rental rates for tenants, prospective tenants, airlines and concessionaires and submits proposals to higher authority for approval. Resolves problems with airport tenants. Co-ordinates custodial and maintenance services, and inspects airport equipment, building and grounds. Orders repair or replacement of defective or outmoded equipment used in upkeep of airport facilities. Reviews and analyzes reports and submits proposals to senior management recommending changes to improve efficiency, decrease costs or increase revenues. Investigates and supervises removal of damaged aircraft on airport.

1147-134 HARBOUR MASTER(water trans.) **DPT:118**

GED: 5 SVP: 7 EC: B PA: L 5 6

Plans, organizes, directs and controls, through subordinate managers and supervisors, harbour operations, in accordance with governmental regulations and policies laid down by senior management: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of guiding and berthing of ships and operations of port authority. Assigns berth, dock and shed space for incoming ships. Enforces orders, rules and regulations, concerning use and control of navigable waters, tidelands and submerged lands within harbour. Co-ordinates acquisition and maintenance of watercraft and erection of facilities as authorized by higher authority. Analyzes reports of harbour operations to plan and develop future operations, considering factors, such as economic conditions, tariff changes and commodity movements.

1147-138 MANAGER, PIPELINES(trans., n.e.c.; utilities, n.e.c.) **DPT:118**

GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through supervisors, activities concerned with operation and maintenance of oil or natural-gas pipelines and compressor stations within assigned geographic region: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of the operation and maintenance of oil and gas pipelines, compressor stations and related equipment. Analyzes forecasts of consumer demands and submits proposals for new construction to senior management. Maintains liaison with federal, provincial and municipal agencies

concerning construction projects. Plans and directs safety-training programs.

May manage series of compressor stations, or distribution of gas within city or town, and be designated accordingly; for example, Compressor-Stations Manager (trans., n.e.c.)
Distribution Manager, Gas (utilities, n.e.c.)

1147-142 MANAGER, TRANSPORT DEPARTMENT(any ind.) **DPT:118**
manager, traffic.
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through supervisors, activities of department concerned with transport of products, materials or employees in most efficient and economical manner:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of company transportation requirements. Analyzes transportation facilities and commodity classifications of various companies to determine most efficient and economical shipping rates and routes. Formulates plans and procedures for transporting raw materials to production areas and finished products to customers, warehouses and storage locations. Negotiates with carriers for transport and warehousing of products and materials, and with insurance company representatives, concerning insurance rates. Provides administrative direction in transport and accommodation of employees travelling on company business, in relocation of company staff, their families and household effects, and in setting up and providing supplies to branch offices. May direct company-owned truck fleet. May confer with customs brokers, or government officials on export documentation requirements. May specialize in managing department arranging employee travel and relocation and be designated accordingly, Manager, Travel and Relocation Department

Communications Management Occupations 1147-162 through 1147-174

1147-162 DISTRICT MANAGER, TELEPHONE COMPANY(telecom.) **DPT:118**
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through supervisors and technical staff, operations of telephone company within assigned district:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of telephone company operations. Confers with senior management in formulating policy concerning development, operation and maintenance of district telephone services. Consults and negotiates with representatives of connecting companies or districts to resolve problems of joint concern. Reviews and analyzes proposals for improvement of, or additions to facilities, and accepts or rejects, or recommends acceptance or rejection, on basis of improved efficiency and cost. Directs and controls, through supervisors, general traffic parameters, such as statistics to predict traffic volume and forecast growth; commercial responsibilities, such as service contracts, billing, marketing and handling complaints; and engineering functions to select, operate and maintain equipment and facilities in an efficient manner.

May be assigned responsibility of a unit or department of the telephone company and be designated accordingly, Traffic Manager, Telephone System

1147-166 MANAGER, RADIO STATION(broadcast., motion pic. & stage) **DPT:118**
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through supervisors and technical staff, activities of one of a series of affiliated radio broadcast stations:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of radio-broadcast-station operations. Confers with senior management to define matters such as station policy and administrative procedures. Consults with governmental-regulatory agencies concerning radio-broadcast regulations, implementation of directives, and operation of radio-broadcast transmitters. Directs, through supervisors, administrative functions, such as cost and payroll accounting; and engineering activities, such as maintenance of studio equipment and

radio broadcast transmitters. Consults with organizations such as service clubs, civic agencies and religious groups concerning radio broadcasts of community-oriented activities.

1147-170 MANAGER, TELEVISION STATION(broadcast., motion pic. & stage) **DPT:118**
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through supervisors and technical staff, activities of one of a series of affiliated television stations:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of television-broadcast-station operations. Confers with senior management to establish company and administrative procedures. Consults with governmental-regulatory agencies and reviews department programs to ensure conformance to regulations. Co-ordinates activities of each department within station, and ensures compatibility with national network.

1147-174 REGIONAL MANAGER, TELECOMMUNICATIONS SYSTEM(telecom.) **DPT:118**
district manager, telecommunications system.
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls, through subordinate supervisors and technical staff, operations of telecommunications system within assigned region or district:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of telecommunications-systems operations. Confers with senior management in formulating policy concerning development, operation and maintenance of regional or district telecommunications services. Interprets company policies and implements company procedures and practices through subordinate management to ensure efficient telecommunications-system operations in area of responsibility. Analyzes and assesses adequacy and suitability of telecommunications installation, operations and maintenance programs, and develops and implements improvements to the system within scope of responsibility. Reviews and analyzes recommendations for improvement of, or addition to telecommunication facilities, and accepts or rejects, or recommends acceptance or rejection, on basis of efficiency and cost. Directs and controls, receiving and transmitting of messages; installation, maintenance, additions and removal of plant supply and services; and selection of adequate and suitable equipment and facilities. Consults with governmental-regulatory agencies concerning adherence to telecommunications regulations and implementation of directives.

May be assigned responsibility for a specific unit, department or function within the district or region and be designated accordingly; for example,

Commercial Manager, Telecommunications System
Engineering Manager, Telecommunications System
Plant Manager, Telecommunications System
Traffic Manager, Telecommunications System

1149-OTHER MANAGERS AND ADMINISTRATORS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with carrying out managerial and administrative activities, as described under the master title, 01-170 MANAGER (prof. & tech., n.e.c.), in organizations; such as, publishing houses, newspaper firms, zoos, professional associations, real estate firms, public utilities, and warehouse complexes. Occupations concerned with managing administrative, or methods and procedures services of an establishment are also classified in this unit group.

1149-110 MANAGER, NEWSPAPER(print. & pub.) DPT:018
managing editor.
GED: 5 SVP: 9 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, operations of one of a series of affiliated newspapers: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Confers with owner or representative to establish editorial policy, make-up plans and determine news coverage of special events. Appoints editorial and department heads, and directs their work in accordance with newspaper policy. Relays information to department heads and directs development of publication as a whole, with particular attention to front page. Originates plans for special features or projects, and assigns department heads to implement them. Writes policy editorials or advises subordinates of position to be taken on specific public issues. Represents publication at professional and community functions. May perform duties of one or more subordinate editors, as well as direct activities of advertising, circulation or production personnel.

1149-114 MANAGER, SCIENTIFIC, TECHNICAL AND OTHER PERIODICAL PUBLICATIONS(print. & pub.) DPT:118
GED: 5 SVP: 9 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers and supervisors, activities of department of publication or other company engaged in preparation, editing and production of scientific, technical and other periodical publications: Performs duties described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Analyzes industrial, technological and other relevant developments and problems to determine suitable subject matter for publication as hand books, manuals, pamphlets, magazines or articles. Engages writers or assigns staff, specializes in fields; such as, commerce, chemistry, electronics and business administration to prepare proposed authoritative material. Reviews or directs subordinates engaged in reviewing final drafts of manuscripts preparatory to printing, to ascertain that most effective treatment of subject matter has been made, utilizing knowledge of business, industrial, scientific, technical or other specialized subject matter. May co-ordinate and direct staff engaged in research programs and publish research findings and results. May direct distribution of publications to available markets and promote sale of advertising space in publication. May represent publication at meetings and make speeches on newsworthy topics at public gatherings.

1149-118 DIRECTOR, ZOO(prof. & tech., n.e.c.) DPT:118
director, zoological park.
GED: 5 SVP: 8 EC: B PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, operation of zoological park under general direction of municipal or other administration: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), using specialized knowledge of the care and display of living animals. Directs planning of layout and facilities of zoological park, using knowledge of animals and their habitats. Directs plan for systematic breeding or acquisition of specimen animals for zoo. Selects and purchases or sells and trades surplus animals born in captivity. Co-ordinates activities of employees, such as animal keepers, to provide animals with suitable conditions of cleanliness, proper diet and veterinary care. Provides facilities and conducts research into the habits of animals in zoo. Administers plans to attract extensive public patronage of zoo facilities. Attends meetings of international and national zoological societies to exchange knowledge. Negotiates with professional hunters to capture wild animals from native habitat. May participate in field expeditions to collect specimen animals for zoo.

1149-126 MANAGER, ADMINISTRATION(prof. & tech., n.e.c.) DPT:118
administrative services manager; office manager.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls through subordinate managers or supervisors, administrative activities of department, product division, program, regional office or other unit of an industrial, commercial, governmental or other establishment:

Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of accounting, auditing, supplies procurement, records management and other aspects of business administration. Directs preparation of operating budget for submission to management and maintains control of approved budget, including collection, custody, investment, disbursement and accounting of all funds. Organizes administrative services; such as, typing, bookkeeping, preparation of payrolls, reproduction, filing, data-processing and communications. Maintains efficient flow of work by evaluating office operations and revising procedures accordingly. Confers with other officials to formulate and standardize new or revised policies and procedures. Directs administration of other services for organization; such as, warehousing, parking lots, protective services and maintenance.

1149-130 MANAGER, ASSOCIATION(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, activities of professional, business or trade association within assigned region: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Directs through subordinates, research activities, such as the conduct of surveys and compilation of statistics. Prepares or directs preparation of educational materials, such as newsletters, magazine articles and press releases to inform membership or public. Provides information and technical assistance to members, customers of members or public within scope of association. Conducts or participates in news conferences and delivers speeches. Negotiates with leaders of government, business or other interested groups to implement constituted policy and achieve objectives of members. Plans and co-ordinates annual meetings for conduct of business, membership conventions, trade exhibits and local or regional workshops to improve communications and facilitate attainment of objectives. Recommends changes in policy, acceptance or expulsion of members, levying of special assessments and appointments to appropriate committees. Directs maintenance of membership records, processing of applications and collection of dues. May conduct investigations into professional conduct, competence or financial responsibility of members to enforce rules and regulations of association. May be designated according to type of association; for example, Manager, Manufacturers' Association
Manager, Textile Association

1149-134 MANAGER, METHODS AND PROCEDURES(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans, organizes, directs and controls through subordinate managers and supervisors, activities of department concerned with analysis and improvement of organization's methods and procedures: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying specialized knowledge of standardization, simplification and production measurement techniques to improve administrative efficiency. Directs analyses of current policies, procedures, practices, forms and records; ascertains essentiality of existing activities and recommends changes to simplify or reduce clerical and administrative work and processing time. Directs studies to test makes and models of office machines and equipment, including electronic computers to prepare recommendations for practical application, proper utilization and economical operation of equipment recommended. Meets with management to discuss results of studies and modify or develop new administrative procedures. Directs preparation of manuals covering new or improved office methods, assists with installation of such methods and arranges for training of employees in required techniques. Maintains follow-up program on new methods installations and reviews on a comparative basis effectiveness of new and old systems. Develops and maintains system for standardization of format and consistency of content of manuals, instructions and other publications involving policies, procedures, reports, statements and forms. May prepare training material on, all phases of methods work, for systematic use of employees engaged in this field.

1149-138 MANAGER, PUBLIC UTILITIES(elec. power; utilities, n.e.c.; water works) DPT:118
GED: 5 SVP: 8 EC: I PA: L 5 6 7

Plans, organizes, directs, and controls, through subordinate superintendents or foremen, operations of one or more public utilities systems within designated territory: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), applying knowledge of electrical or mechanical engineering and utility systems. Establishes supervisory policy to define authority for independent decisions imperative to continuous service to public and for safety of workers. Investigates, evaluates and determines appropriate application of new developments in industry. Anticipates and forecasts required capacity and economic trends, prepares budget recommendations and makes decisions in keeping with current economic conditions. Co-operates with associates in solving interrelated administrative, organizational and technical problems. Directs, through supervisors, the maintenance of records, and the upkeep of equipment and structures. May be designated according to particular phase of operation or division of activity; for example, Manager, Electric Power(elec. power) Manager, Sewage Disposal(utilities, n.e.c.) Manager, Water Works(water works)

1149-142 MANAGER, REAL ESTATE(insur. & real estate) DPT:118
GED: 5 SVP: 8 EC: B PA: S 5 6 7

Plans, organizes, directs and controls through subordinate managers or supervisors, activities of real estate department concerned with purchase, sale and leasing of facilities or properties for industrial, commercial or institutional organization: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.), utilizing specialized knowledge of real-estate management. Directs staff in preparation of lease agreements and documents concerning appraisal, purchase, rental or sale of real estate. Directs staff in preparation and maintenance of detailed records of company owned or leased properties, options, rights-of-way and special agreements covering land or mineral rights. Negotiates contracts for leasing arenas, auditoriums or stadiums, gymnasiums or other facilities. Oversees preparation of plans for new buildings or renovations of existing buildings, and initiates acquisition of furnishings, office equipment and building supplies. Inspects properties under consideration for acquisition, lease, disposition or improvement, and submits reports with recommendations concerning findings. Authorizes maintenance of company properties; such as, auditoriums, hotels, office buildings and warehouses. Calls for tenders for maintenance or new construction work. Examines and forwards bids to senior management, together with recommendations, for approval. Directs negotiations of contracts with land and building or facility owners, renters and sellers or buyers. May be designated according to specialized function; for example, Manager, Leasing Manager, Property Rentals

1149-146 MANAGER, WAREHOUSE(storage, n.e.c.) DPT:118
GED: 5 SVP: 7 EC: B PA: L 4 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, the warehousing activities of commercial, industrial or institutional establishment: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Establishes operational procedures for activities, such as the verification of incoming and departing shipments, the handling and disposition of materials, and maintenance of inventory. Inspects physical condition of warehouse and equipment, and arranges for repairs or replacements as required. Confers with department heads to ensure co-ordination of activities within the establishment, such as production, sales, records control and purchasing. Issues, through foremen, work assignments, such as

handling and storage of packaged goods, filling, routing and shipping of customer orders and preparation of reports. May direct, through supervisors, personnel in sales accounting, inventory control and profit analysis. May demonstrate and sell new kinds of technical and professional equipment, supplies and services. May direct staff to serve customers who call at supply house. May purchase and import materials, supplies and equipment, and direct the reclamation of damaged, unused or used materials. May be designated according to type of warehouse; for example, Manager, Tobacco Warehouse(tobacco)

1149-150 MANAGER, BUILDINGS, VEHICLES AND SUPPLIES(any ind.) DPT:118
GED: 4 SVP: 9 EC: B PA: L 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, acquisition, construction and maintenance of organization's real properties, vehicles and supplies: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Consults with and advises plant, division and district operating heads. Directs research and control work by subordinate staff on methods and results relating to selection, rental, purchase, construction and maintenance of property, according to management policies and procedures. Directs subordinate supervisory staff on the requisition, distribution and use of tools, materials, supplies and all types of company-owned and company-operated vehicles and associated equipment. Reviews estimates of cost of maintenance or repair work and approves orders for purchasing material or parts. Directs overhaul and repair activities to ensure conformity with methods, standards and documentation requirements. May visit individual locations to review maintenance activities and ensure conformity with standards. May visit or send subordinates to attend manufacturers' courses on maintenance of new equipment, or prepare maintenance instructions for new equipment. May negotiate with insurance adjusters regarding damage claims, and represent company in resolving complaints related to rented properties.

1149-154 DIRECTOR, HORSE RACING(amuse. & rec.) DPT:118
GED: 4 SVP: 6 EC: I PA: S 5 6 7

Plans, organizes, directs and controls, through subordinate managers or supervisors, activities at one of a series of affiliated race tracks: Performs duties as described under master title, 01-170 MANAGER (prof. & tech., n.e.c.). Appoints racing supervisors and officials; such as placing judge, jockey-club steward, patrol judges, horse identifier and other race track employees. Approves condition books prepared by racing secretary to provide horse racing program for owners. Authorizes allocation of stables and stalls to horses, and formulates rules and regulations pertaining to occupancy of stables. Transmits communications between race track management and owners of horses. Co-ordinates and directs maintenance of race track and construction and maintenance of buildings and directs through subordinates, activities of employees engaged in operating and maintaining track equipment.

1149-199 MISCELLANEOUS MANAGERS AND ADMINISTRATORS

This group includes managers and administrators, not elsewhere classified, for example those who plan, organize, direct and control, through subordinates at a supervisory level or above, the operation of terminal grain elevators, construction, maintenance and operation of irrigation systems, publication of books, and those who perform various managerial activities as management trainees. Typical examples of occupational titles covered by this residual group definition are:
Junior Executive(any ind.)
Manager, Book Publishing(print. & pub.)
Manager, Irrigation District(water works)
Manager Terminal Elevator(feed & flour mill.)

117-OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION

This minor group includes occupations concerned with activities primarily in support of management, such as: examining, analyzing and interpreting accounting and other financial records and policies; reviewing and analyzing

organizational structures, methods, systems and administrative practices; conducting programs of employee placement, recruitment, selection, training, promotion, welfare, safety, compensation, and recreation; purchasing goods and materials for internal organizational use; and enforcing and advising on standards of performance and adherence to regulations. Includes occupations, such as business agents, public-relations and sales promotion men, contract administrators and specialized management consultants. OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION are classified in the following unit groups:

- 1171 Accountants, Auditors and Other Financial Officers
- 1173 Organization and Method Analysts
- 1174 Personnel and Related Officers
- 1175 Purchasing Officers and Buyers, Except Wholesale and Retail Trade
- 1176 Inspectors and Regulatory Officers, Non-Government
- 1179 Occupations Related to Management and Administration, n.e.c.

1171-ACCOUNTANTS, AUDITORS AND OTHER FINANCIAL OFFICERS

This unit group includes occupations concerned with planning and administering accounting services, advising on accountancy problems and planning and conducting audits of accounts of industrial, governmental, other organizations, and private persons. Includes financial officers concerned with other financial programs, such as mortgage approval, credit analysis, and foreign exchange trading.

Accountants 1171-110 through 1171-138

- 1171-110 SUPERVISOR, ACCOUNTANTS(bank. & finance) DPT:138

GED: 5 SVP: 9 EC: 1 PA: S 5 6 7

Supervises and co-ordinates activities of accountants and department clerical staff, engaged in planning and administering accounting systems for an organization:
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.), applying specialized knowledge of accounting systems.
May supervise workers engaged in particular accounting activity and be designated accordingly; for example,
Supervisor, Budget Accounting
Supervisor, Cost Accounting

- 1171-114 ACCOUNTANT(prof. & tech., n.e.c.) DPT:158

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and administers accounting systems for organizations and private persons to provide records of assets, liabilities and financial transactions, and advises on accounting problems:
Assists in preparing budgets and advises on financial problems. Maintains accounts or supervises subordinates in such bookkeeping activities as cash disbursements, travel and transport expenses, raw-materials, purchases, wages, taxes, insurance charges, overhead expenses, stock-on-hand, and receipts from sales. Monitors expenditures or credits on contracts in progress or contracted-out programs. Prepares or reviews tax returns and contests claims before tax officials. Conducts financial investigations into such matters as low level of net return on manufactured product, high overhead, suspected fraud, abnormally high inventory, use of working capital and deviation from predicted or budgeted profit. Acts as liquidating trustee in dissolution proceedings and insolvency or bankruptcy cases. Arranges credit for customers and reports repeated delinquent accounts to management.

Prepares and Certifies financial statements for presentation of management, board of directors, stockholders or statutory public bodies.

- 1171-118 ACCOUNTANT, BUDGET(prof. & tech., n.e.c.) DPT:158

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and administers budget-accounting systems for organization, and advises on related accounting problems:
Develops, installs, and maintains budgeting systems which provide control of expenses incurred in such as marketing production, maintenance costs and capital expenditures. Compares estimated and actual costs, revenues, administrative commitments or other obligations, to determine accuracy of current estimates. Analyzes records of current and past operations to determine trends. Advises management, and recommends methods to ensure optimum use of working capital.
May supervise personnel performing routine phase of budget accounting.

- 1171-122 ACCOUNTANT, COST(prof. & tech., n.e.c.) DPT:158

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and administers cost-accounting systems for organizations, and advises on related accounting problems:
Plans, sets up, and directs systems to record accumulated costs of raw material, labour, and factory overhead, and to determine unit cost. Analyzes changes in design, raw materials, manufacturing methods, wages or other factors for effects on production costs. Provides management with reports which furnish basis for decisions concerning selling prices and advisability of adding or deleting items from line of products.

- 1171-126 ACCOUNTANT, MACHINE PROCESSING(prof. & tech., n.e.c.) DPT:158

GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and administers machine-processing-accounting systems for organizations and advises on related accounting problems:
Analyzes company accounting objectives and confers with management, and other department heads in planning incorporation of machine processing into accounting system. Develops machine-accounting procedures, applying knowledge of accounting systems and machine processes, or interprets accounting systems for development of machine processes by others. Provides assistance in forms design, coding systems, scheduling and accounting controls. Advises management on negotiations with accounting machine

manufacturers and wire-service companies to develop ideas for improvement of accounting systems and to lower costs. Investigates new machine accounting and computing techniques, such as tying into sophisticated central banks on a time-shared basis and into inter-branch data transmission and retrieval facilities.

1171-130 ACCOUNTANT, PROPERTY(prof. & tech., n.e.c.) DPT:158
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and administers property-accounting systems for organizations and private persons and advises on related accounting problems: Records description, location, value, and other pertinent information of all company-owned or leased equipment, buildings and other property. Conducts periodic inventories to keep records current and to ensure that property is well maintained. Distributes maintenance cost to appropriate accounts. Examines records to determine that acquisition, sale, retirement, and other entries have been made. Prepares statements reflecting monthly appreciated and depreciated values. Summarizes statements on annual basis for income tax purposes. Prepares schedules for amortization of buildings and equipment. Advises on purchase and sale of property and on property accounting system.

1171-134 ACCOUNTANT, TAX(prof. & tech., n.e.c.) DPT:158
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and administers tax accounting systems for organizations and private persons, and advises on related accountancy problems: Devises and implements systems to record taxes payable. Prepares and submits briefs to, or represents principals before, various taxing authorities as required by management. Studies new and existing tax legislation to determine probable effects on future operations. Confers with management to evolve policies and procedures to minimize effect of tax increases or extensions and to derive benefit of deductions or relaxations. Advises management regarding tax implications of business programmes, activities and other transactions. Examines accounts and records and computes tax returns according to prescribed rates, laws, and regulations. May specialize in particular aspect of tax accounting; such as, income, estate, real estate, or provincial and federal sales taxes.

1171-138 BRANCH ACCOUNTANT, BANK(bank & finance) DPT:138
GED: 4 SVP: 7 EC: 1 PA: S 5 6 7

Administers branch bank accounting systems and related operational activities: Plans office work flow and prepares regular reports of bank's accounting activities. Makes periodic reviews of books to ensure accounting procedures conform to established standards, and submits reports to manager. Conducts staff meetings to discuss and prepare recommendations on procedural problems and to implement corrective measures. Ensures high standards are maintained relating to customer service, securities delivery, clearing of funds and bank security. Assists in selection, training and appraisal of bank employees. May grant or approve loans within limits set by bank regulations. May assume responsibility of next senior level of management during absence of incumbent. May be concerned with specific area of responsibility and be designated accordingly; for example, Operations Officer, Administration

Auditors 1171-158 through 1171-162

1171-158 SUPERVISOR, AUDITORS(bank. & finance) DPT:138
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Supervises and co-ordinates the activities of auditors and department clerical staff engaged in examining and analyzing accounting records of establishments and preparing reports on their financial status: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.), using specialized knowledge of auditing methods. May supervise workers engaged in particular auditing activity and be designated accordingly; for example, Supervisor, Internal Auditors Supervisor, Public Auditors

1171-162 AUDITOR(prof. & tech., n.e.c.) DPT:258
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Examines and analyzes accounting records of establishment and prepares report on its financial status at a specific date and results of its operating procedures for a specific period: Examines business and financial records and statements, material and equipment inventories, contracts, vouchers, bank statements, cancelled cheques, journals and ledgers, and other documents, to verify accuracy of accounting procedures and compliance with applicable regulations. Analyzes data obtained of deficiencies in control, duplication of effort, extravagance and fraud. Reports to management concerning scope of audit, and financial conditions found. Makes recommendations regarding operational improvements and financial position of company. May certify records and documents. May perform duties on fee basis or be employed by organization and be designated accordingly; for example,

Auditor, Public
Bank Reserves Auditor(bank. & finance)
Internal Auditor

Other Financial Officers 1171-182 through 1171-210

1171-182 SECURITIES COUNSELLOR(bank. & finance) DPT:018
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Provides financial counselling services to bank, trust and brokerage company officials and customers regarding purchase and sale of securities: Analyzes financial background and future trends of stocks and bonds to provide recommendations to bank and trust company officials and customers regarding investments. Negotiates stock and bond transactions in person or through correspondence. Transmits 'buy and sell' orders to trading desk or broker. Computes extensions, commissions and other charges for billing customers and for making payments for securities. Examines stock certificates to verify assignments, guarantees and addresses. Cancels old certificates and issues new ones. Prepares bond price bulletins for use in branches and handles delivery of new issues. Directs activities of workers engaged in performing clerical tasks in connection with securities transactions such as preparing parcels of securities for shipment, posting entries to ledgers and other records, preparing contracts and underwriting accounts. Supervises preparation of periodic reports and returns on security transactions. See also term title 02-090 CONSULTANT (any ind.). May be known according to type of activity.

1171-184 INVESTMENT ANALYST(bank. & finance) DPT:288
financial analyst.
GED: 5 SVP: 8 EC: 1 PA: S 7

Conducts statistical analyses of information affecting investment program of public, industrial and financial institutions, such as banks, insurance companies and brokerage and investment houses: Interprets data concerning investments, their price, yield, stability and future trends using daily stock and bond reports, financial periodicals, securities manuals and personal interviews. Constructs charts and graphs regarding investments. Summarizes data, setting forth current and long term trends in investment risks and measurable economic influences pertinent to status of investments. Performs research and makes analyses relative to losses and adverse financial trends and suggests remedial measures. See also definition for term title, 02-090 CONSULTANT (any ind.). May supervise and co-ordinate activities of workers engaged in conducting and processing statistical analyses of information affecting company investment program. May specialize in securities analysis and be designated accordingly, Securities Analyst

1171-186 BURSAR(educ.) DPT:138
GED: 5 SVP: 7 EC: I PA: S 7

Receives and disburses funds in college, university or other educational establishment:

Receives tuition fees and other amounts due and directs deposit in appropriate bank accounts obtaining approval of higher authority as required. Disburses amounts owing for goods or services received. Supervises maintenance of books of accounts and prepares financial statements. Reports periodically on financial affairs to board of governors or other governing body.

1171-188 FOREIGN BANKING ARRANGEMENTS OFFICER(bank. & finance) DPT:168
inter-bank arrangements officer.
GED: 5 SVP: 7 EC: I PA: S 5 6

Administers and advises on reciprocal banking arrangements with foreign banks, to facilitate bank's foreign business:

Studies information on economic, monetary and political situation in assigned foreign countries, analyses current financial statements of foreign banks and prepares recommendations to grant or deny credit. Reviews domestic and foreign legislation affecting exchange banking arrangements and develops forms, instructions and procedures for transacting foreign credit business. Handles correspondence and reviews operation of accounts maintained by bank with each correspondent foreign bank, and evaluates extent of business resulting from reciprocal arrangement. Maintains records of foreign business, prepares periodic reports and returns to keep management informed and recommends changes in operations.

May supervise and co-ordinate activities of workers performing clerical tasks associated with foreign banking arrangements. May attend foreign trade conventions and meetings of export-import associations and other groups to promote inter-bank business.

1171-190 TRUST OFFICER(bank. & finance) DPT:168
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Administers private, corporate, and probate trusts:

Locates and prepares inventories, and evaluates assets of probated accounts for beneficiaries, banks and courts. Directs realization of assets, liquidation of liabilities, payment of bills, preparation of federal and provincial tax returns, and collection of earnings. Manages business or hires manager until heirs take over. Invests trust funds, administers escrows, and acts as agent in securities trust transactions. Maintains probate files showing payment of bills and taxes.

1171-194 HEAD OFFICE UNDERWRITER(insur. & real estate) DPT:168
GED: 5 SVP: 7 EC: I PA: S 7

Reviews applications for insurance, evaluates risks involved and determines premiums, extent of coverage and other conditions to form insurance contract, in accordance with company's underwriting policies:

Reviews previous profit and loss records and fixes company tariff guidelines and regulations for routine insurance business. Determines terms and conditions of contracts, within laid-down policies, using actuarial tables, rate and code books, and other reference materials. Examines such documents as individual's or company application forms, inspection reports, insurance maps, assessment rolls, and medical reports to determine degree of risk, considering factors; such as, applicant's financial standing and reputation, age, occupation, accident experience, and value and condition of real property. Ascertains amount of insurance carried by company, on single or group of closely related risks, and evaluates possibility of large losses due to catastrophe or excessive insurance. Refuses application where risk is excessive for company or reinsures a percentage of risk with one or more other companies to ensure safe and profitable distribution of risks.

May decrease proposal policy value or specify contract endorsement to limit company's obligation when risk is substandard. May be designated according to type of insurance underwritten; for example, Accident-and-Sickness Underwriter
Automobile Underwriter
Bond Underwriter
Fire Underwriter
Liability Underwriter
Marine Underwriter

1171-198 PASSENGER AND FREIGHT RATES ANALYST(prof. & tech., n.e.c.) DPT:218
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Analyzes passenger and freight rate structures and provides advice to management of transportation company:

Reviews current sales forecasts, revenue estimates, revenue budgets, route frequencies and schedules in relation to existing rate structure and rates of other companies. Develops new tables for approval of senior management, based on latest outlook. Files proposed rates with regulatory agencies and testifies at hearings held by regulatory agencies on proposals. Negotiates with other companies regarding changes in rate structure and division of interline revenues. Compiles reports for senior officials. See also definition for term title, 02-090 CONSULTANT (any ind.).

1171-200 STUDENT AWARDS OFFICER(educ.) DPT:218
student loan officer; student scholarship officer
GED: 5 SVP: 7 EC: I PA: S 5 6

Administers bursaries, grants, loans and scholarship programs of college or university:

Interviews students applying for loans or grants, and reviews application forms to determine whether students are qualified on basis of need and academic standing. Establishes amount of loans and grants according to regulations, funds available and extent of demand. Obtains promissory note and cosigners, if necessary. Authorities release of funds to student and makes arrangements for repayment. Maintains record of loan fund balance to control amounts loaned. Suggests alternative solutions to financial problems, such as, bursaries, scholarships and part-time employment. Provides information to students on filing applications for scholarship. Reviews scholarship applications and prize award recommendations for completeness. Arranges meetings of faculty committee and prepares agenda. Selects candidates to be considered for scholarships and submits applications and recommendations to committee for decision. Disburses funds awarded by committee. Prepares reports of scholarship activities for university administration, donors and campus bulletin. Explains scholarship program to potential donors and advises on methods of establishing scholarships. Assists committee in establishing academic criteria for scholarships, policies for loans and grants, and planning for budget. Accounts to committee for all funds disbursed.

1171-202 ENGINEERING-DEPRECIATION EVALUATOR(prof. & tech., n.e.c.) DPT:188
cost engineer, retirements; inventory and cost engineer.
GED: 5 SVP: 7 EC: I PA: S 7

Determines retirement values and depreciation rates of company property:

Maintains consolidated records of depreciation, cost, and appraised value of buildings and equipment, using data obtained from appraisal engineering staff. Estimates life expectancy of property, utilizing engineering knowledge and statistics on property durability, such as mortality tables and curves. Computes retirement values from appraisal date and life expectancy estimates. Compiles reports and lists of retired and retireable items and values for various operating purposes, such as for maintenance of continuing property records.

1171-206 FOREIGN EXCHANGE TRADER(bank. & finance) DPT:138
GED: 4 SVP: 7 EC: I PA: S 5 6 7

Conducts foreign exchange transactions for bank and bank customers: Determines prices at which exchange shall be purchased and sold, based on demand, supply and stability of currency. Trades in various currencies with international and other branches by telephone or wire. Issues and checks all outgoing letter-of-credit cables and debits branches concerned. Verifies foreign exchange contracts and customers' liabilities. Examines and approves bills-of-exchange. Processes incoming payment orders received from foreign banks by crediting customers' accounts or transferring currency to other banks or by notifying recipient either by telephone or mail. Verifies outgoing currency shipments. Answers enquiries from customers and guides

branch banks in conduct of foreign exchange business. Records foreign exchange entries on trading sheet. Prepares and presents reports and briefings to management on foreign exchange market conditions, finances and exchange rate trends. Supervises clerical personnel engaged in foreign currency transactions. May be concerned with a particular activity related to foreign exchange and be designated accordingly; for example, Foreign Payment Clerk, Chief Trading Position Adjuster

1171-210 CREDIT OFFICER(bank. & finance) DPT:268
loan analyst.
GED: 4 SVP: 6 EC: 1 PA: S 5 6 7

Examines, evaluates and processes applications for credit or loans and authorizes or recommends their approval: Analyzes applicant's financial status, references and credit rating to determine feasibility of granting loan request. Corresponds with or interviews applicants or creditors to resolve questions regarding loan application. Approves loans within specified limits or refers loans to manager or loan committee for approval. Analyzes applicant's financial problems and adjusts loan agreement to restore loan to good standing. Prepares reports of delinquent accounts that cannot be collected. Keeps record of arrears of mortgage installment payments and prepares routine letters concerning them. Prepares statement of overdue mortgage and loan accounts arranged according to amounts owing, time overdue, and credit rating of client, and forwards statements to solicitors for legal action to recover bank's equity. Answers inquiries concerning loan balances, taxes and penalties from credit bureaus, finance companies and banks regarding credit experience with customers. May represent bank in legal proceedings. May solicit new business by sending form letters or brochures to prospective customers and by analyzing potential loan markets to develop prospects for loan. May specialize in reviewing applications for mortgages. May be designated according to type of activity and area or work; for example, Consumer Credit Officer Mortgage Arrears Collection Officer Mortgage Officer

1173-ORGANIZATION AND METHODS ANALYSTS

This unit group includes occupations concerned with reviewing, analyzing and improving business and organizational systems to assist management to operate with greater efficiency and effectiveness. Activities include: conducting organizational studies and evaluations, designing systems and procedures for new work processes, conducting work simplification and measurement studies, maintaining a forms and records management program and preparing and maintaining systems and procedures manuals. Industrial engineering occupations are classified in Unit Group 2145, INDUSTRIAL ENGINEERS. Electronic- data-processing systems analysts are classified in Unit Group 2183, SYSTEMS ANALYSTS, COMPUTER PROGRAMMERS AND RELATED OCCUPATIONS.

1173-110 SUPERVISOR, ORGANIZATION AND METHODS ANALYSTS(prof. & tech., n.e.c.) DPT:138
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Supervises and co-ordinates activities of workers engaged in reviewing, analyzing and improving business and organizational systems to assist management to operate with greater effectiveness and economy: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.) May supervise workers engaged in particular organization and methods activity and be designated accordingly; for example, Supervisor, Forms Management Analysts Supervisor, Methods and Procedures Analysts Supervisor, Record Systems Analysts Supervisor, Work Study Analysts

1173-114 METHODS AND PROCEDURES ANALYST(prof. & tech., n.e.c.) DPT:268
management analyst; management engineer.
GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Conducts studies of organizational structures, methods, systems and procedures used in non-industrial departments of government, commercial, industrial or other establishments, assists management to operate with greater efficiency and effectiveness, by performing any combination of the following duties:

Consults with managers, supervisors and other staff and studies data; such as, organization and flow charts, records, reports, manuals and job descriptions. Undertakes or reviews work studies, and observes methods and procedures in action, to determine existing procedures. Records and analyzes data, identifies problems and considers solutions through institution of measures, such as revision of work flow, redefinition of job functions and interrelationships, to eliminate redundancies and delays. Simplifies and standardizes record-keeping systems and assists in implementation of data-processing or other types of equipment. Considers long term benefits and implementation costs of various alternatives and prepares recommendations for improvements.

May assist management in implementing approved recommendations by preparing or revising instructions and procedural manuals and instructing staff in new work methods.

1173-118 FORMS ANALYST-AND-DESIGNER(prof. & tech., n.e.c.) DPT:264
forms management analyst.
GED: 4 SVP: 6 EC: 1 PA: L 4 5 6 7

Analyzes requirements, designs and develops business or other forms for use in government, commercial, or industrial establishments: Discusses purpose of new forms with management and reviews systems or procedures in which forms are to be used. Analyses form requirements, determines data to be entered on form, best arrangement of data and considers possible combination and standardization of existing forms. Determines design specifications; such as, sequence of data arrangement of spaces, size, kind and colours of paper; and size and style of printing of type to be used. sketches of proposed forms on graph paper or design sheets, using drawing instruments, and submits design for approval. Prepares detailed specifications for manufacture of approved forms. May prepare written instructions on use of form. May prepare special charts to show the role of the form in various stages of the system. May specialize in a particular forms management activity and be designated accordingly; for example, Forms Analyst Forms Designer

1173-122 ORGANIZATIONAL ANALYST(prof. & tech., n.e.c.) DPT:268
GED: 5 SVP: 7 EC: 1 PA: L 5 6 7

Conducts studies of departments and other units of establishment to identify organizational problems, and develops and recommends solutions:

Establishes problem areas and terms of reference through discussions with senior officials. Studies organizational objectives, delegation and exercise of authority, interrelationship of positions, organizational regulations, instructions and reports, formal and informal lines of communication and control, and allocation of planning and development responsibilities. Prepares or examines organizational charts and other data, and interviews staff to validate data while conducting analysis. Identifies sources of and makes recommendations to resolve organizational problems, by redefining boundaries and relationships for authority and accountability. Identifies procedural and other matters that may require detailed methods and systems analysis. Determines responsibility areas for reporting, control and appraisal and suggests channels of co-ordination and communication. May develop instructional and implementation material from studies to assist in staff retraining and orderly implementation of recommendations.

1173-126 RECORD-SYSTEMS ANALYST(prof. & tech., n.e.c.) DPT:268
file-systems analyst; records management specialist.
GED: 4 SVP: 6 EC: I PA: L 5 6

Analyzes requirements and designs or revises filing systems and records:

Reviews and analyzes current record systems to assess efficiency and effectiveness, or consults with management to determine needs for new or revised systems. Studies new, mechanized, or automated equipment, to assess and evaluate their potential in meeting management requirements. Identifies internal and external records retention requirements. Schedules removal and destruction of inactive records. Determines more economical storage methods, and devises procedures to protect vital legal and financial records or facilitate records retrieval. Develops most effective methods of preparing reports and determining lowest cost by reducing numbers to practical minimum. Prepares proposals for new systems, or writes reports incorporating recommendations for changes to existing systems, and disposal of inactive records.

May write procedural instructions for use of records-keeping personnel. May conduct training courses and advise staff during implementation programs.

1173-130 WORK-STUDY ANALYST(prof. & tech., n.e.c.) DPT:268
GED: 4 SVP: 6 EC: I PA: L 5 6 7

Analyzes existing and proposed ways of doing work, develops easier and more effective work methods, and establishes worker performance standards:

Determines, records and analyzes existing and proposed ways of doing work by reviewing production records, job descriptions, procedural and office machinery specifications, manuals and similar data. Interviews staff and charts work-methods and procedures. Prepares recommendations for new or improved work flow, work station layouts and employer work methods. Divides work activities of recommended method into work motion elements and records time required by various qualified workers to complete each work element, using stop watch or other measuring techniques. Applies time requirement data to establish performance standards for qualified workers. Determines staffing requirements by relating calculated average individual performance to workload. Prepares report detailing recommended method, and production quotas. Provides guidance in implementation of control and reporting systems to ensure accuracy of information.

1174-PERSONNEL AND RELATED OFFICERS

This unit group includes occupations concerned with carrying out policies, as directed by management, primarily related to personnel administration and industrial relations. Activities include: representing management or labour in collective bargaining procedures; participating in programs of recruitment, selection, placement, training, welfare, safety, compensation, promotion, and separation of employees; preparing job analyses to provide occupational data; advising university or college students on types of financial aid available; providing a placement service to client-establishments and job seekers; and interviewing and counselling job seekers to determine their suitability for employment, vocational training, rehabilitation programs, and related manpower services. Managerial occupations in the fields of personnel and industrial relations in private industry are classified in Unit Group 1136, PERSONNEL AND INDUSTRIAL RELATIONS MANAGEMENT OCCUPATIONS. Managers and administrators of government manpower services are classified in Unit Group 1113, GOVERNMENT ADMINISTRATORS. Educational and vocational counselors in schools, colleges and universities are classified in Unit Group 2391, EDUCATIONAL AND VOCATIONAL COUNSELLORS. Occupations related to personnel research and administration of counselling programs which require a background in psychology, are classified in Unit Group 2315, PSYCHOLOGISTS.

1174-110 LABOUR-RELATIONS SPECIALIST(prof. & tech., n.e.c.) DPT:118
GED: 5 SVP: 8 EC: I PA: S 5 6

Acts as consultant on labour-management relations, representing either management or labour union:

Studies and interprets collective-bargaining agreements and current labour-market conditions to assist in establishing policies and operating procedures. Represents management or union in contract negotiations, and conciliation and arbitration procedures. Reviews contract administration to ensure that management and labour organizations adhere to contract specifications. Confers with department heads, labour representatives and workers to resolve grievances and determine disciplinary actions. Prepares summary and statistical reports of employee grievances and settlements. Participates in informational programs and preparation of employee handbooks and manuals to effect co-operation and co-ordination in union-management relations. See also definition for term title, 02- 090 CONSULTANT (any ind.).

1174-114 EMPLOYMENT SUPERVISOR(prof. & tech., n.e.c.) DPT:138
GED: 5 SVP: 8 EC: I PA: S 5 6

Supervises and co-ordinates activities of workers engaged in recruiting, interviewing, employing and inducting new employees:

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Forecasts personnel requirements in conjunction with departmental heads or other supervisory representatives. Develops recruiting techniques and implements programs to attract qualified personnel. Assesses results of recruitment programs and employment practices. Directs preparation of employee induction and training programs, and reviews employee development. Reviews transfers, promotions and discharges, disputes and grievances.

May conduct exit interview to determine reason for employee's leaving.

1174-118 PERSONNEL OFFICER(prof. & tech., n.e.c.) DPT:108
personnel administrator.

GED: 5 SVP: 7 EC: I PA: S 5 6

Provides personnel administrative services for commercial, industrial, governmental or other organization, performing any combination of the following duties:

Confers with management representatives and department supervisors to determine personnel requirements, and carries out analyses as required to obtain detailed information about job specifications. Prepares job descriptions for positions in organization, and advertises vacancies. Interviews and tests applicants, selects most suitable candidates and settles terms of employment, or submits proposals to management. Interviews new employees to advise them on pay and other conditions of employment, such as hours of work, leave and attendance and promotional opportunities. Provides advice, guidance and information to supervisors and employees on interpretation, application and implementation of personnel policies, procedures and regulations, concerning matters, such as employee performance, discipline, welfare and health, and training courses. Counsels employees to assist in solving personal problems or difficulties associated with work. Plans and organizes training of employees by identifying kinds of training required, evaluating and selecting suitable training methods, and conducting courses, or recommending courses available from outside agencies. Resolves staff problems in areas such as employee performance, absenteeism and grievances, by interviewing employees and supervisors and recommending or initiating remedial action. Assists in planning and organizing services, such as canteens, first aid facilities and safety programs, pension schemes and other welfare and recreational facilities for employees. Maintains confidential personnel records.

May supervise clerical staff. May specialize in particular area of personnel work, such as training or staff relations, and be designated accordingly; for example, Staff-Relations Administrator
Staff-Training Officer

1174-122 OCCUPATIONAL ANALYST(prof. & tech., n.e.c)

DPT:068

GED: 5 SVP: 7 EC: 1 PA: S 5 6

Analyzes and synthesizes job data to provide occupational information for personnel, administrative, information and other services of private, public or governmental organizations:

Consults with management to determine type, scope and purpose of analysis required. Searches for background information on nature of organization and its activities, and studies relevant data. Initiates job study by touring establishment, obtains or prepares charts showing broad functions of each department, and lists job titles used within establishment. Observes and studies jobs performed, and interviews workers, supervisors and managerial personnel to ascertain nature of work performed, worker characteristics required and other relevant factors. Writes detailed job definitions to describe work performed and other significant data, such as educational requirements, training time, environmental conditions, physical activities, and skills and abilities required for satisfactory job performance. Makes comparative analyses of job descriptions and specifications to determine employment activities that are common to a number of similar jobs. Writes occupational descriptions by combining and synthesizing groups of similar jobs. Prepares, from documentation services, drafts of occupational descriptions for validation by experts in the field of work or for verification through visits, observation and interview, and writes finished manuscript.

May prepare occupational classification systems, career information booklets, interviewing aids for employment officers and manpower consellers, job evaluation reports and other aids to industrial, governmental and other organizations in activities; such as, personnel administration, manpower research and planning, training, placement, occupational information and vocational guidance. May specialize in a particular activity and be designated accordingly; for example,

Job Analyst

Job Evaluator

Occupational Analyst, Classification System

Occupational Monograph Specialist

Position Classifier

Salary Analyst

1174-126 FINANCIAL-AIDS OFFICER(educ.) DPT:168

GED: 5 SVP: 7 EC: 1 PA: S 5 6

Co-ordinates program of scholarships, grants, loans and student employment in college or university:

Interviews and advises student candidates of various types and amounts of financial aid available. Explains conditions of loans, grants or scholarships, evaluates applications, and notifies successful candidates. Assists eligible students to apply for provincial, federal or other grants, and makes appropriate recommendations. Co-ordinates selection of candidates and disbursement of funds, with admissions and business departments.

May supervise clerical and accounting support staff. May be assisted in selection of candidates and of types and amounts of aid by faculty committee. May advise students of employment opportunities according to information gained from personal contacts, commercial or industrial recruitment programs, and through federal and private employment agencies.

1174-130 MANPOWER COUNSELLOR(gov. serv.) DPT:108

GED: 5 SVP: 6 EC: 1 PA: S 5 6

Counsels clients in a government manpower office:

Provides for clients and employers, advice, guidance and information on such matters as occupational requirements, labour market conditions, vocational training, rehabilitation facilities, career development, employment practices, and labour legislation. Interviews, selects and refers clients seeking employment. Obtains data on employer's manpower requirements through interviews and on-site visits. Determines need for and gives specialized counselling to clients who require it. Administers and interprets test, and arranges for special placement of clients. Selects and prepares clients for vocational training, rehabilitation programs, and other services. Recommends clients for financial assistance within mobility plan, and completes arrangements for family relocation. Develops and maintains good working relationships with educational and vocational training establishments, community welfare agencies, service clubs and employer and employee organizations, through personal visits and public-speaking engagements. Collects, prepares and disseminates labour market information, completes forms and prepares reports.

1174-134 EMPLOYMENT INTERVIEWER(prof. & tech.,

n.e.c.)

DPT:268

placement officer.

GED: 5 SVP: 6 EC: 1 PA: S 5 6

Interviews applicants to determine their suitability for employment on basis of education, ability, interests and other employment factors:

Records information, such as scholastic achievement, past employment history, and impressions gained from applicant during interview. Evaluates information to determine suitability for employment. Supplies information to applicant regarding nature of job vacancies, company and union policies, duties, responsibilities, working conditions, hours and pay, and promotional opportunities. Prepares rating on applicant, notifies selected applicants of job offers, and makes recommendations for future hirings. Prepares permanent records of interviews with both successful and unsuccessful applicants. Discusses hiring policies with department heads or other supervisory staff to ensure effectiveness of selection techniques or recruitment programs. Observes jobs to obtain first-hand information of job requirements.

May interview job applicants in an employment agency, and refer them to prospective employers for consideration. May travel to interview applicants for positions and exercise hiring authority. May specialize in a particular aspect of employment interviewing and be designated accordingly; for example,

Personnel Recruiter

Student-Placement Officer

1175-PURCHASING OFFICERS AND BUYERS, EXCEPT WHOLESALE AND RETAIL TRADE

This unit group includes occupations concerned with buying goods, materials, or business services, for internal use or for further processing in governmental, industrial, business and other institutions, where the items purchased are not for resale. Activities include: establishing requirements of the organization; developing and interpreting specifications for goods or materials; studying technical publications, documents and advertising material; interviewing suppliers or inviting tenders; conducting special buying missions and negotiating for prices; establishing delivery schedules and performing other functions directly related to purchasing. Purchasing managers are classified in Unit Group 1141, PURCHASING MANAGEMENT OCCUPATIONS. Buyers who buy for resale are classified in Unit Group 5191, BUYERS, WHOLESALE AND RETAIL TRADE.

1175-110 PURCHASING OFFICER, BUSINESS SERVICES

(bus. serv.)

DPT:118

buyer, time and space.

GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Purchases advertising space on billboards, in publications, or time on radio and television stations, and other business services for client:

Reads published data, such as program schedules and audience viewing ratings for radio and television stations, magazines and newspapers, and examines advertising cost quotations, to determine time and space availability and costs. Interviews or contacts representatives of radio and television stations, publishers and outdoor advertising agencies, to negotiate purchase of time and space, consistent with cost and budget limitations. Verifies all space and time contracts of media suppliers. Consults with media sales representatives as to product sales histories and new media opportunities. Records time spent on particular client services, to determine costs to client. Assists media planning committee in selecting appropriate media forms for client's products.

1175-114 PURCHASING OFFICER, FOOD AND RELATED PRODUCTS(whole. trade) DPT:118
buyer, food and related products.
 GED: 5 SVP: 7 EC: B PA: S 5 6 7

Purchases food and related products, such as livestock, fish, grain, fruit, vegetables and milk for internal use, consumption or processing by governmental, industrial or business establishment:

Reviews requisitions of establishments. Studies trade periodicals and other market information, to determine product quantity and quality to be purchased. Contracts with farmers to raise, or purchase products; such as fruits, vegetables, grain, poultry, livestock, milk or maple syrup. Inspects, grades and calculates live and dressed weight of livestock and fish, to determine value and yield. Negotiates with producers for purchase of products consistent with current market prices, and approved establishment standards and budgetary limitations. Arranges delivery of purchases for specified date and destination. Keeps records of purchases.

May suggest methods of feeding, housing and milking cows, and refrigerated-storage of milk, to improve quality and production of milk, and to comply with sanitation requirements. May study data regarding crop growing and suggest methods to improve quality and crop production. May approve and pay accounts for purchases. May be designated according to product purchased; for example,

Purchasing Officer, Fish
 Purchasing Officer, Fruit
 Purchasing Officer, Livestock
 Purchasing Officer, Milk
 Purchasing Officer, Vegetables

1175-118 PURCHASING OFFICER, MATERIAL(whole. trade) DPT:118
buyer, material.
 GED: 5 SVP: 7 EC: I PA: S 5 6 7

Purchases machinery, equipment, raw materials, tools, parts, fabrics, accessories, office and other supplies for internal use, consumption or processing by governmental, industrial, business and other establishment:

Reviews requisitions, studies suppliers' catalogues and current market data on varieties, quantities, and prices available, to determine requirements. Interviews vendors' to ascertain their ability to meet establishment's requirements for design, performance, cost, quality, quantity and delivery date. Reviews tenders or proposals from vendors, and negotiates with acceptable bidders for contracts, keeping within budgetary limitations. Discusses product defects with quality control or inspection personnel, to determine source of problems and ensure defects are rectified by supplier, make necessary changes in specifications or change suppliers. Keeps informed on all new sources of supply for important materials. Keeps records of purchases.

May ensure invoices are correct with purchase orders and approve invoices for payment. May be designated according to type of merchandise purchased; for example,

Buyer, Furs(fur goods)
 Buyer, Piece Goods(garment)
 Buyer, Tobacco(tobacco)
 Purchasing Officer, Office Equipment
 Purchasing Officer, Ore(iron & steel)

1175-199 OTHER PURCHASING OFFICERS AND BUYERS, EXCEPT WHOLESALE AND RETAIL TRADE

This group includes purchasing officers and buyers, except wholesale and retail trade, not elsewhere classified; for example, those who purchase foodstuffs, beverages, furnishings, equipment, services and supplies for hotels, restaurants, ships and other establishments. Typical examples of occupational titles covered by this residual group definition are:

Procurement Officer(gov. serv.)
 Purchasing Officer, Hotel(cater. & lodg.)
 Purchasing Officer, Restaurant(cater. & lodg.),
 Purchasing Steward(cater. & lodg.)

1176-INSPECTORS AND REGULATORY OFFICERS, NON-GOVERNMENT

This unit group includes occupations concerned with enforcing adherence to regulations and advising on standards in organizations or agencies, other than municipal, provincial and federal government, on matters such as safety, quality of service in public transportation, and observance of company policies and procedures in units of chain organizations. Government, and non-government inspectors, testers, graders, and samplers in the field of processing materials, machining, fabricating and assembling goods or products are classified in their appropriate major, minor and unit groups. Inspectors and Regulatory Officers unique to government are classified in Unit Group 1116, INSPECTORS AND REGULATORY OFFICERS, GOVERNMENT.

1176-110 SAFETY INSPECTOR(any ind.) DPT:264
safety-and-sanitary inspector.
 GED: 4 SVP: 7 EC: I 5 6 7 PA: L 2 4 5 6 7

Inspects machinery, equipment and working conditions to ensure conformance to fire, safety and sanitary standards and regulations:

Examines equipment specifications and inspects and tests equipment, such as hoisting devices, machine shields, ladders, scaffolding, materials handling equipment, storage and hot-water tanks, safety devices and clothing to ensure conformance to safety standards and serviceability. Observes workers to ensure protective devices, such as gas or dust masks, and safety glasses or shoes, are being utilized according to regulations and that combustible or hazardous materials are used and stored according to approved procedures. Conducts tests in work areas to detect toxic fumes, explosive gas-air mixtures, or other work hazards, using testing instruments. Examines new and reconditioned equipment to ensure conformance to safety standards. Ensures fire-prevention materials and other safety supplies, such as first-aid kits, stretchers and blankets are kept to predetermined standards. Investigates accidents and unsafe working conditions, studies causes, and recommends remedial action. Assists in conducting safety meetings and campaigns or contests.

May report unsanitary conditions and careless actions of workers to supervisor. May be designated according to type of equipment inspected; for example,

Crane Inspector
 Escalator Inspector

1176-114 INSURANCE INSPECTOR, LOSS-PREVENTION (insur. & real estate) DPT:267
 GED: 4 SVP: 7 EC: B PA: L 4 5 6 7

Inspects insured properties to evaluate conditions affecting underwriting standards, and develops and promotes safety programs:

Inspects buildings, vehicles and operations of commercial and industrial establishments, to determine physical conditions or unsafe practices. Compiles data affecting premiums by measuring area or frontage or making scale drawings of properties. Prepares reports with recommendations for corrective action. Analyzes claims and accident-history data or inspects scene of accident, to determine causes and effects, and to develop safety program compatible with needs and resources of insured. Conducts meetings to promote safety programs among educational, civic and industrial groups, by informing them of government and company safety standards and regulations, using motion pictures and other visual aids to supplement discussion.

1176-122 SAFETY CO-ORDINATOR(motor trans.) DPT:128
 GED: 4 SVP: 6 EC: I PA: L 4 5 6

Co-ordinates safety program and instructs truck and tractor-trailer drivers in matters pertaining to traffic and safety regulations, and care of equipment:

Instructs drivers regarding company rules, penalties for infractions, defensive driving, and safety and conservation measures, using blackboard, photographs and movie projector. Rides with drivers to assess operating ability, and to detect errors in driving vehicle and in handling cargo. Patrols highway to detect violations of company regulations by drivers and to observe condition of vehicles and road. Investigates accidents involving company trucks by observing scene of accident, questioning driver and witnesses and by arranging for inspection of vehicles to determine causes of accidents. Directs

transfer of cargo from damaged truck to substitute vehicle to insure scheduled delivery. Analyzes own or underwriter's accident reports, confers with department heads concerning, such problems as accident rates and abuse of equipment, and recommends remedial measures.

1176-126 TRAFFIC INSPECTOR(motor trans.; rail trans.)
DPT:163
GED: 4 SVP: 6 EC: O PA: L 4 5 6

Co-ordinates scheduled service, and investigates service disruptions within assigned territory of streetcar or bus- transportation system: Observes vehicles along route to ensure service is provided according to schedule. Investigates delays in maintaining schedules, accidents and complaints, and files written reports. Informs dispatcher of disruptions in service, using radiotelephone. Liaises with dispatcher in rerouting traffic around temporary obstructions, such as accidents, fires or water-main breaks, or to supply additional coaches on temporarily-overloaded routes. Determines need for changes in service, such as additional coaches, or changes in route and revised schedules, to increase operating efficiency and improve service. Drives automobile along route to detect conditions hazardous to equipment and passengers. Assists in dispatching equipment when necessary. Recommends promotions and disciplinary action involving transportation personnel. Inspects vehicles having mechanical trouble along route and calls maintenance personnel to repair or recover vehicle. May liaise with police or city department of works to eliminate hazards along route.

1176-130 RADIATION-CONTAMINATION MONITOR(prof. & tech., n.e.c.)
DPT:264
radiation monitor.
GED: 3 SVP: 7 EC: I 6 7 PA: L 4 5 6 7

Monitors personnel, plant facilities and work environment to detect radioactive contamination: Measures intensity and identifies type of radiation in working areas, using beta-gamma survey meters, gamma-back-ground monitors and alpha-beta-gamma counters. Collects air samples to determine airborne concentration of radioactivity, and collects film badges and pocket detection chambers and other monitoring equipment worn by personnel to measure individual exposure to radiation. Informs appropriate authorities when individual exposures and area radiation levels approach maximum permissible limits. Instructs personnel in radiation-safety procedures and demonstrates use of protective clothing and equipment. Monitors time and intensity of exposure of personnel working in radiation-waste-disposal areas. Inspects incoming shipments of radio-active materials for contamination, using radiation counter, and tags shipments in which radiation count exceeds specifications. Records data concerning status of areas being decontaminated, rate of radiation exposure to personnel, and location and intensity of radioactivity in contaminated areas. Tests detection instruments against standards to ensure their accuracy. May recommend decontamination procedures.

1176-134 SERVICE-STATION INSPECTOR(whole. trade)
DPT:258
GED: 4 SVP: 6 EC: B PA: L 5 6

Inspects motor-vehicle service stations in designated area, to ensure conformance to company's operating policies and procedures: Inspects service station stockrooms, to ensure that only firm's approved products are in stock. Inspects machinery and equipment to ensure serviceability. Examines station's appearance, lighting and rest rooms to ensure specified standards of cleanliness and good house-keeping are met by dealers. Develops plans, and counsels dealers on methods to increase sales and profits. Prepares estimates of capital and maintenance expenditures for company's service stations, and advises management on market and competitive developments in designated territory. Resolves major complaints of service station's customers. May interview and recommend suitable applicants as service station lessees.

1176-138 ACREAGE-QUOTA-ASSIGNMENT OFFICER
(whole. trade)
DPT:268
GED: 4 SVP: 6 EC: I PA: S 5 6

Assigns tobacco acreage quotas to members of tobacco farmer's co-operative to regulate production of tobacco: Analyzes previous tobacco production figures and acreage quotas, and determines current years production requirements based on estimated demand, based on current market conditions. Calculates percentage of production acreage allotment for each co-operative member. Submits quota allotments and supporting data used for calculations, to tobacco growers marketing board for approval. Notifies members of individual assigned quotas. May re-calculate quota allotments, if member of co-operative files an appeal. May direct activities of land-measuring team and calculate tobacco acreages from measurement data.

1176-142 DINING-SERVICE INSPECTOR(rail trans.)
DPT:268
GED: 4 SVP: 6 EC: I 5 PA: L 5 6 7

Inspects railroad dining and lounge car facilities, observes service, and investigates complaints to ensure conformance to company's standards and regulations: Inspects cooking utensils and area to ensure they are clean and sanitary. Inspects food and observes preparation to ensure that food is cooked and served in sanitary and appetizing manner. Observes waiters to ensure that service to patrons is efficient and courteous. Investigates complaints by patrons of poor service or discourteous employees. Inspects liquor cabinets to ensure contents are correct, according to invoices and during crew change-over. Instructs dining and lounge personnel regarding rules, regulations and services. Reports complaints by patrons and action taken to resolve complaints. Recommends improvements to service and operating methods. May inspect railroad passenger-cars to ensure conformance to cleanliness and passenger comfort standards.

1176-146 INSPECTOR, TRAVEL ACCOMMODATION(cater. & lodg.)
DPT:268
travel-accommodation appraiser.
GED: 4 SVP: 6 EC: I PA: L 5 6

Inspects, examines, analyzes and assesses travel accommodation, operations, and services of individual or chain of motels, hotels, restaurants and campsites to ensure conformance to government or company standards and policies: Inspects and rates accommodation and services according to type, quality, amounts charged, sanitary conditions and related factors. Investigates complaints of patrons, such as increase in rates, condition of accommodation, and failure of company to comply with standards in buildings and services. Examines structures, surroundings, furnishings and supplies, to determine if repairs or replacements are required, and makes appropriate recommendations. May classify establishment according to travel accommodation standards used by motor vehicle associations.

1176-150 GAS-CUSTOMER-LIAISON MAN(utilities, n.e.c.)
DPT:357
GED: 4 SVP: 6 EC: I PA: L 5 6

Inspects industrial gas-metering equipment and advises customers regarding company regulations and procedures: Visits and instructs customers on gas-metering (flow regulating) equipment and functional irregularities that may occur. Persuades customers to observe metering procedures and company requests to curtail gas consumption during periods when available gas supply is limited. Collects and examines charts used in metering devices to detect abnormal gas consumption patterns, and reports results to supervisor. May calculate customer's monthly gas consumption.

1176-154 AMMUNITION-SAFETY INSPECTOR(explosives)
DPT:387
GED: 4 SVP: 6 EC: B 5 6 PA: L 3 4

Inspects ammunition and component materials, and loading, and magazine areas to detect unsafe conditions and to enforce safety regulations:

Examines cartridges and other metallic items for corrosion or physical defects. Visually examines explosive components for evidence of deterioration. Inspects physical condition of buildings and magazines, to ensure adequacy of safety equipment and precautions. Observes methods of storing and handling ammunition by plant personnel, for compliance with safety regulations. Inspects incoming and outgoing shipments for proper loading, bracing, packaging and marking. Prepares inspection reports.

May measure components, such as bullets, pellets and detonators for conformity to standards, using gauges.

1176-158 INSPECTOR, TRANSPORTATION SERVICES

(any ind.) DPT:288

GED: 3 SVP: 5 EC: 1 PA: S

Observes activities and conduct of transportation company employees to assess quality of service and volume of traffic to improve operations:

Assumes role of passenger and observes employees performing assigned duties, to note their efficiency, deportment, treatment of passengers and adherence to company regulations and schedules. Observes and records time required to load and unload passengers or freight, and volume of traffic at each stop or station, at different hours of day. Reports findings to management with recommendations for improvement of operating services and efficiency.

1176-162 FIRE-SAFETY INSPECTOR(any ind.) DPT:367

GED: 3 SVP: 5 EC: B 6 PA: L 2 3 4 5 6 7

Inspects premises of commercial and industrial establishments, to detect and eliminate fire hazards:

Inspects fire-extinguishing and fire-protection equipment, such as sprinkler systems, fire extinguishers and hose houses of fire apparatus, to ensure operating efficiency and compliance with company and government regulations. Tests sprinkler systems by tripping alarm used to detect fires or excess heat in building. Prepares reports listing repairs and replacements required. Patrols premises and investigates unsafe conditions and practices which may cause or increase fire hazards. Reports findings to appropriate authorities with recommendations for eliminating or counteracting hazards. Demonstrates use of fire-fighting equipment and dispenses fire prevention literature to workers. Keeps current plans of all water system lines and information on availability of adequate supply of water in event of fires.

May train employees in fire-fighting procedures and arrange for specified number of workers for fire duties. May prepare fire reports covering cause of fire, procedure used to control fire, injuries sustained and treatment services provided. May keep inventory and requisition supplies for fire-fighting.

1176-166 INSPECTOR, HUMANE SOCIETY(misc. serv.)

DPT:368

GED: 3 SVP: 5 EC: B PA: M 4 5 6

Investigates reported cases of neglect or cruelty to animals for humane society:

Answers enquiries from public and gives information regarding current laws and regulations governing neglect or cruelty to animals. Inspects sites and examines animals, to investigate complaints made against individuals to determine if complaints are justified. Interviews witnesses, records statements and particulars and takes photographs. Arranges for transfer of starving, trapped or injured animals to shelter or area where they will be cared for. Confers with society officials and their legal advisors, to determine if court action is warranted. Arranges for issuance of summons to person being charged. Attends court and gives evidence. Inspects premises, such as pet shops, stables, stockyards and circuses to ensure animals are cared for properly.

1176-199 OTHER INSPECTORS AND REGULATORY OFFICERS, NON-GOVERNMENT

This group includes inspectors and regulatory officers, not elsewhere classified; concerned with enforcing and advising on standards and adherence to regulations in non-government organizations or agencies, on matters such as quality of service and observance of company policies and procedures; for example those concerned with inspecting barbershops and beauty salons belonging to a chain of such establishments for conformance to 'hygiene and licensing

requirements. Typical examples of occupational titles covered by this residual group definition are:

Compliance Officer (bank. & finance)

Beauty Salon Inspector (pers. serv., n.e.c.)

1179-OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with carrying out activities directly related to management and administration in government, industry or other organizations. Includes occupations such as business agents, public relations men, sales promotion men, contract administrators, and specialized management consultants. Publicity writers are classified in Unit Group 3359, OCCUPATIONS IN WRITING, N.E.C. Personnel and industrial relations officers are classified in Unit Group 1174, PERSONNEL AND RELATED OFFICERS.

Business Agents

1179-110 through 1179-118

1179-110 EXECUTIVE SECRETARY, ASSOCIATION(misc. serv.) DPT:168

executive director, association.

GED: 5 SVP: 6 EC: 1 PA: S 5 6

Administers and co-ordinates program as formulated by board of directors and members to promote and implement policies and objectives of association.

Interprets program to members and public. Co-ordinates and directs association functions, such as periodic meetings and the production of association publications. Organizes committees and aids them in attaining objectives and developing policies regarding such matters as legislation affecting the association membership, research designed to effect growth and efficiency, and employment conditions. Supervises clerical staff engaged in preparing corporate records and reports. Prepares publicity releases.

May be designated according to the specific association directed; for example,

Executive Director, Alumni

Executive Director, Nurses' Association

Executive Director, Teachers' Federation

1179-114 BUSINESS AGENT, LABOUR UNION(misc. serv.)

DPT:218

union representative.

GED: 4 SVP: 6 EC: 1 PA: S 5 6

Administers business affairs of labour-union on behalf of members:

Draws up proposed terms of collective agreement for approval by union membership. Negotiates with management on matters, such as hours of work, wages, individual grievances and fringe benefits. Interprets and assists in implementing collective agreements. Arranges regular meetings of members, hires hall and engages guest speakers. Drafts new releases and articles for union or other publications. Works in liaison with community, welfare, labour and government organizations on matters affecting union members.

May collect dues and maintain appropriate financial records. May assign union members to job vacancies.

1179-118 AGENT(amuse. & rec.; broadcast., motion pic. & stage) DPT:318

business manager.

GED: 4 SVP: 6 EC: 1 PA: S 5 6

Administers business affairs of entertainers and theatrical companies and negotiates contracts with officials of unions and places of entertainment:

Negotiates with officials of unions, motion picture or television studios, theatrical production, or entertainment houses on behalf of performing artist, troupe or company for contracts and financial returns to be received. Manages business details of tours and

engagements. Advises clients concerning contracts, wardrobe, and effective presentation of act, using knowledge of show business. Obtains reservations for transportation and hotel accommodations. Represents client in public contacts, such as handling fan mail, telephone inquiries, and requests for personal appearance on behalf of charitable organizations.

Promotional Agents 1179-138 through 1179-158

1179-138 CAMPAIGN CONSULTANT(bus. serv.) DPT:118
development officer; fund-raising consultant.
GED: 5 SVP: 7 EC: I PA: L 5 6

Assists chief executive of gift-supported institutions, agencies and enterprises in administration of fund-raising campaigns: Gathers and assesses facts and opinions concerning fund-raising potential of client institutions, and analyzes information according to principles of successful fund raising. Prepares workable plan, operating schedule, terms of reference, goals and quotas for volunteer organization, and suggests strategies for reaching goals and quotas to chief executive. Implements approved strategies. Directs workers engaged in development, assignment and canvas control of lists of prospective donors, and directs the preparation of the statement of fund-raising case and of other essential materials used to communicate the statement to campaign workers and prospective donors. Briefs volunteer leaders concerning their responsibilities, and trains volunteer workers in effective face-to-face soliciting techniques. Directs campaign headquarters activities, such as supervision of treasury procedures and setting up of controls for all expenditures. See also definition for term title, 02-080 CONSULTANT (any ind.). May direct fund-raising activities of nation-wide benevolent organization. May co-ordinate fund-raising operation with those of similar organizations, or with sub-units in numerous communities. May approach individuals or community groups for donations.

1179-142 CO-ORDINATOR, TOURISM(amuse. & rec.; gov. serv.) DPT:158
GED: 5 SVP: 7 EC: I PA: S 5 6

Co-ordinates and directs public-tourist services and facilities within designated area to promote tourist patronage: Directs the activities of workers engaged in the inspection and evaluation of tourist facilities and services to encourage adherence to accepted standards. Prepares publicity materials to stimulate tourist patronage. Assists private agencies in promoting tours and answers inquiries from prospective visitors relative to attractions of area. Confers or corresponds with proprietors of tourist facilities, government officials, and other interested parties, to suggest changes in facilities, standards and legislation to promote tourist trade. Submits recommendation to governments for the development of natural attractions, such as fishing grounds, park areas and waterways to enhance recreational and tourist potential. Plans and gives training to guides and other personnel engaged in tourist trade. Attends conventions and other functions and delivers speeches to stimulate interest in a particular area. Establishes information centers to inform tourists of area's advantages.

1179-146 PUBLIC-RELATIONS MAN(prof. & tech., n.e.c.) DPT:158
publicity director.
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Plans, organizes and carries out a program of information designed to influence the public favourably towards employer's organization, product or services, by performing any combination of the following duties: Plans, organizes, and co-ordinates public-relations activities, explains requirements, and assigns tasks to own or free-lance publicity writers. Prepares news releases. Obtains photographic or other illustrative material. Appraises and revises material submitted by publicity writers, photographers, illustrators and others. Selects written material, photographs and illustrations, judged most likely to create favourable publicity. Organizes special exhibitions, entertainment, competitions and social functions to promote goodwill and favourable publicity. Represents employer in dealings with press, radio, television and other publicity media, and attends business, social and other functions.

May conduct public-opinion polls to ascertain effectiveness of advertising program. May be designated according to specific area of public relations work, and be designated accordingly; for example, Press Agent
Visits Co-ordinator

1179-150 INDUSTRIAL-DEVELOPMENT REPRESENTATIVE(prof. & tech., n.e.c.) DPT:218
area-development officer; economic-development officer.
GED: 5 SVP: 7 EC: I PA: S 5 6

Prepares studies and reports and negotiates with representatives of industrial, commercial and other organizations to stimulate industrial development in area served by own organization: Prepares reports on available plant sites, showing availability and quality of water resources, mineral deposits, electric power, labour supply, transportation facilities and other requirements. Prepares statistical abstracts, indicating such relationships as trends in tax rates in given communities, and proportion of total work forces having specified skills. Visits headquarters of industrial and business firms contemplating relocation, and attends conventions or similar functions, to stimulate interest in a particular area. Negotiates with community, business and public utility representatives to eliminate obstacles to industrial development and to promote harmonious relations. Co-operates with transportation officials to improve service, rate structure and facilities to enhance attractiveness of area to industrial location. May communicate with representatives of government, public utilities, universities and other groups to co-ordinate research activities.

1179-154 SALES-PROMOTION ADMINISTRATOR(prof. & tech., n.e.c.) DPT:238
sales-promotion manager.
GED: 5 SVP: 7 EC: I PA: S 4 5 6 7

Prepares, administers and analyzes programs to promote sale of products or services, by performing any combination of the following duties: Reviews publications and confers with knowledgeable persons to obtain information regarding existing market conditions. Analyzes market conditions, sales possibilities, consumer-buying habits, competitive conditions, production costs and product lines to determine promotional approach. Develops sales promotion programs to achieve objectives. Recommends research studies, new or improved products and packaging, pricing and dealer-shared advertising expenditures. Informs other departments of marketing strategies and promotional plans to ensure efficiency and co-ordination. Evaluates promotional and marketing results against budgeted sales, costs, profits and effect on future sales. Maintains and analyzes records of pertinent statistical information. Supervises workers engaged in preparing promotional material, displays and other forms of advertising. Plans and organizes demonstrations to promote product or service. Prepares and administers direct-mail-advertising programs. Visits customers to advise on such matters as floor layout, training programs and incentive objectives. May be designated according to type of promotional activity; for example, Account Executive
Direct-Mail Specialist
Media-Advertising Director
Product Promoter(food & bev., n.e.c.)
Promotion Representative Vehicle-Leasing-and Sales(ret. trade)
Spare-Parts-Field Representative(motor vehicle)

1179-158 TECHNICAL-SERVICE CONSULTANT(prof. & tech., n.e.c.) DPT:268
GED: 5 SVP: 7 EC: I PA: S 5 6

Provides consultative services to customers of manufacturing establishment by giving technical, marketing and other advice: Supplies information regarding handling, contents installation and technical uses of product. Confers with department managers concerning problems of packaging, customer specifications, and competitive product information. Assists sales staff in promotional activities. Submits reports on product consumption or services rendered. Investigates consumer complaints at source and attempts to remedy situation, exercising tact and knowledge of product. Surveys

potential markets and new uses of products. See also definition for term title, 02-090 CONSULTANT (any ind.). May direct activities of technicians or field engineers providing technical advice or maintenance service to customers on a contract basis.

Other Administrators and Consultants, n.e.c. 1179-178 through 1179-299

1179-178 CORPORATE SECRETARY(prof. & tech., n.e.c.)
DPT:168
administrative secretary.
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Promulgates policy decisions, maintains official records, prepares corporate reports, takes minutes and answers correspondence for Board of Directors of organization, personally or working through subordinates:

Makes arrangements for, prepares agendas, and gives notice of Board of Directors' and shareholders' meetings. Attends meetings, prepares proxies, minutes and subsequent correspondence, and provides departments with copies of approved policy statements, regulations, instructions and amendments. Affixes corporate seal and attests, signs, or countersigns corporate documents as authorized. Acts as custodian of corporate documents, contracts, leases, and deeds to corporate-owned property, minute, and stock transfer books and all general records other than those kept by the treasurer and controller; and files all corporate reports as prescribed by governmental authorities. Maintains current register of names and addresses of shareholders and attends to corporate correspondence concerning matters of general corporate policy.

1179-182 ADMINISTRATIVE OFFICER(prof. & tech., n.e.c.)
DPT:118
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Administers office services, such as personnel, budget preparation and control, accommodation and facilities, housekeeping, records and special management studies, performing any combination of the following duties:

Studies management methods and analyzes operating practices to improve work flow, simplify administrative procedure and implement cost reductions, and makes recommendations to management. Prepares annual estimates of expenditures, and maintains budgetary and inventory controls. Evaluates requests for or changes in accommodations and approves, proposes alternatives or rejects requests. Locates accommodation, and studies real-estate data to compare rental expenditure with purchase cost. Inspects building and office area to evaluate suitability considering such factors as location, floor area, parking facilities and future expansion. Negotiates lease or purchase. Develops and sketches office layout to reflect management requirements. Consults with architect, contractors and others on a continuing basis to ensure scheduled occupancy. Supervises and co-ordinates activities of workers engaged in clerical and maintenance duties. Interviews job applicants, conducts orientation of new employees and implements training program. Reviews and answers correspondence.

May be designated according to type of administration specialization; for example,
Accommodation Officer
Research Administrator. University(educ.)

1179-186 CORPORATE PLANNER(prof. & tech., n.e.c.)
DPT:168
GED: 5 SVP: 7 EC: 1 PA: S 4 5 6

Advises corporate management in the preparation, co-ordination, review and revision of short-term and long-range planning, working in conjunction with managers, supervisors and subordinate staff:

Defines corporate goals and objectives. Plans and develops programs to ensure rates of growth and profitability. Prepares studies and conducts continuing reviews to assess corporate performance, and advises management regarding results of studies. Reviews proposals for major capital expenditures to ensure conformity with corporate plans, and determines economic justification of proposals. Plans and directs or undertakes special studies requested by senior-management officials regarding new or improved products or processes. Seeks out,

investigates and evaluates outside opportunities including licences, patents, joint ventures and possible mergers.

May be designated according to specific assignment or function; for example,

Adviser, Development Planning
Co-ordinator, Profit Planning

1179-190 CONTRACTS ADMINISTRATOR(prof. & tech., n.e.c.)
DPT:218
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Negotiates and administers contracts for the purchase or sale of equipment, materials, products or services and evaluates contractor's claims for additional contractual compensation, by performing any combination of the following duties:

Examines estimates of materials, equipment and production costs, performance requirements and delivery schedules for completeness and accuracy. Prepares bids, process specifications, test and progress reports and other documentary evidence that may be required. Reviews bids from other firms for conformance to contract requirements and determines acceptable bids. Negotiates contract with customer or bidder. Requests or approves amendments to or extensions of contracts. Co-ordinates work of contractors or activities of sales department with production and shipping departments to ensure that contract obligations are fulfilled. Formulates and co-ordinates procurement policies and procedures. Evaluates contractor's claims for additional contractual compensation and negotiates settlements. Confers with engineering or production staff to resolve contractor's differences regarding terms of contract when notice of intent to claim is received. Determines validity of claim and prepares report stating cause, organization's responsibility, and recommended remedial action to prevent recurrence. Negotiates with contractor to effect acceptance of claim settlement and initiate payment procedure. Confers with legal counsel on claims requiring litigation.

May be designated according to the specific phase of contract administration; for example,
Contract-Claims Examiner
Contract Negotiator

1179-194 STATIONS-RELATIONS ADMINISTRATOR
(broadcast., motion pic. & stage)
DPT:118
GED: 5 SVP: 6 EC: 1 PA: S 5 6

Co-ordinates and controls broadcasting-program schedules between network and affiliated independently-owned radio and television stations:

Determines and controls schedules of network programs for affiliated stations. Notifies the network of time changes to broadcasting schedules. Advises station personnel regarding operating procedures to disseminate programs to all parts of network. Ensures that broadcasting policies are enforced throughout the network and informs affiliated stations of policy changes. Negotiates network fees with affiliated stations. Acts as liaison officer between various stations and other networks. Assists in formulating network policies.

1179-198 PROPERTY ADMINISTRATOR(gov. serv.; insur. & real estate)
DPT:218
property manager.
GED: 5 SVP: 6 EC: 1 PA: S 5 6

Administers the acquisition, appraisal, management and disposal of governmental or private properties:

Examines title deeds and documents relating to the sale, purchase and lease of property to ensure that details are recorded and legal requirements covered. Negotiates or approves purchase, rental or sale of property on behalf of government department or property investment section of private corporation. Initiates and directs studies to compile data for the analysis of rents, real property values and maintenance costs. Maintains records of property revenues and expenditures, administers budget and prepares associated reports. Inspects properties and recommends or directs disposal by negotiated sale or lease of those surplus to requirements. Supervises activities of personnel engaged in real estate operations, and in clerical, security and maintenance duties related to management of property.

May write or prepare promotional material such as news releases, photographs and drawings for newspapers, radio and television or display. May negotiate short-term leases for arenas, auditoriums and stadiums or administer residential, commercial or industrial

investment properties for client and arrange maintenance, rentals, rent collections and prepare reports on such matters as mortgage disbursements, taxes, insurance premiums and lease expiration dates and be designated according; for example,
Property-Management Agent(insur. & real estate)
Shopping-Centre Administrator(insur. & real estate; ret. trade)

1179-202 FREIGHT-TRAFFIC CONSULTANT(bus. serv.)

DPT:268

GED: 5 SVP: 6 EC: 1 PA: S 4 5 6

Advises industries, business firms and individuals regarding tariff rates and preferable modes of shipment for freight:

Quotes overall rates for shipment and indicates number of times freight must be handled and total elapsed time shipment may take. Advises client of preferable mode of transport, such as air, water, railway or truck without regard to higher rates when speed is paramount. Conducts audit on client's freight bills for overcharges due to improper rating and tariff quotations. Files claim with insurance company for losses, damages and overcharges. Files reparation claim on behalf of client with governmental or other agency for improper and unfair freight-tariff charges. See also definition for term title, 02-090 CONSULTANT (any ind.).

1179-206 BAND ADMINISTRATOR(prof. & tech., n.e.c.)

DPT:138

reservation administrator.

GED: 4 SVP: 6 EC: 1 PA: L 5 6

Administers the business affairs of an Indian reservation and carries out directives issued by the Council:

Attends Council meetings and advises Council on matters that fall within its jurisdiction. Carries out inspections, and reports to Council on all matters pertaining to public works. Accepts tenders for construction or maintenance work to be carried out on reservation, and awards contracts approved by Council. Compiles annual estimates of anticipated reservation revenues and expenditures. Investigates by-laws passed by Council, such as those covering sanitation and zoning, and ensures that by-laws are maintained. Supervises and co-ordinates the activities of other administrative employees working for the reserve, such as financial personnel and clerks, or personally carries out their activities.

1179-299 OTHER OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION

This group includes workers, not elsewhere classified; related to management and administration, for example, those who engage individual performers or companies for entertainment establishments; interpret and explain hospital- and medical-insurance plans to contracting subscribers; negotiate and settle compensation claims due to prospecting and drilling for oil; investigate and collect information concerning oil-well drill operations and geological and geophysical prospecting; co-ordinate activities to provide facilities and service for conventions; plan locations of franchised-retail outlets; and develop and implement security procedures for confidential material. Typical examples of occupational titles covered by this residual group definition are:

Booking Agent (amuse. & rec.)

Claims Agent, Properties (petrol. & coal prod., trans., n.e.c.)

Conference Co-ordinator (bus. serv.; cater. & lodg.)

Franchise-Outlet Promoter (bus. serv.)

Hospital-Medical-Insurance Plan Representative
(gov. serv.; insur. & real estate)

Leaseman (bus. serv.)

Scout (oil & nat. gas)

OCCUPATIONS IN NATURAL SCIENCES, ENGINEERING AND MATHEMATICS

This major group includes occupations concerned with research and the practical application of scientific knowledge in the field of physical sciences, including specializations such as chemistry, electricity, electronics, geology, physics, mechanics, and meteorology; in life science, including specializations such as agriculture, biology, and pharmacology; in architecture, engineering, surveying and draughting; in mathematics, statistics, systems analysis and actuarial sciences; and in related technical fields. Managerial occupations related to natural science, engineering and mathematics are classified in Unit Group 1131, **MANAGEMENT OCCUPATIONS, NATURAL SCIENCES AND ENGINEERING**. Social science occupations are classified in Major Group 23, **OCCUPATIONS IN SOCIAL SCIENCES AND RELATED FIELDS**. **OCCUPATIONS IN NATURAL SCIENCES, ENGINEERING AND MATHEMATICS** are classified in the following minor groups:

- 211 Occupations in Physical Sciences
- 213 Occupations in Life Sciences
- 214/215 Architects and Engineers
- 216 Other Occupations in Architecture and Engineering
- 218 Occupations in Mathematics, Statistics, Systems Analysis and Related Fields

211-OCCUPATIONS IN PHYSICAL SCIENCES

This minor group includes occupations concerned with research in the physical sciences to discover and establish scientific principles and laws and apply them to specific scientific problems and situations in such fields as chemistry, physics, geology, meteorology and metallurgy. Occupations concerned with providing technical support in physical sciences research are included. These occupations are classified in the following unit groups:

- 2111 Chemists
- 2112 Geologists and Related Occupations
- 2113 Physicists
- 2114 Meteorologists
- 2117 Physical Sciences Technologists and Technicians
- 2119 Occupations in Physical Sciences, n.e.c.

2111-CHEMISTS

This unit group includes occupations concerned with conducting basic research to extend the knowledge of the science of chemistry, and with conducting applied research to develop new or improved materials, compounds and substances for commercial purposes; developing analytical methodology and techniques, and performing quantitative and qualitative analyses and experiments in organic, inorganic and physical chemistry. Activities include: synthesizing compounds and products; analyzing finished products to determine quality; preparing laboratory reports and compiling data for technical reports. Biochemists and clinical chemists are classified in Unit Group 2133, **BIOLOGISTS AND RELATED SCIENTISTS**.

2111-110 AGRICULTURAL CHEMIST(prof. & tech., n.e.c.)

DPT:031

agricultural-research chemist.

GED: 6 SVP: 8 EC: 1 6 PA: L 4 7

Conducts basic and applied research into development of new and better uses for agricultural products and the processing and storage of these commodities:

Performs duties similar to those of 2111-126 **ORGANIC CHEMIST** (prof. & tech., n.e.c.). Utilizes various types of micro-organisms to convert cereal grain carbohydrates to new compounds. Investigates and controls enzyme systems to transform natural substances; such as, proteins, starches, vegetable oils and plant gum, into useful commercial products. Conducts chemical analyses of fruits, vegetables and other plants to develop species or strains resistant to fungi, insects and similar destructive agents. Analyzes soils to determine presence of lime, fertilizer or other chemical ingredients, and devises methods of washing out or neutralizing soil poisons. Develops chemical compounds and synthetic hormones (substances that activate or retard

action in certain cells) for use in weed control or as insecticides, fungicides and rodent poisons. Performs experiments concerning development and utilization of fertilizers and investigates problems; such as, chemistry of phosphate systems, use of insoluble potash ores as fertilizers, and nitrogen fixation in soils. Conducts experiments with natural and synthetic materials or by-products to develop new foods, food preservatives, anti-adulteration agents and similar products. Tests starch and sugar products, cereals, canned or dehydrated foods, dairy products, vegetables, meats, flavouring and other food products to ensure compliance with government food laws and standards of quality and purity. Prepares, or supervises preparation of, laboratory reports, specifications and standards. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with one particular product or process of agricultural chemistry and be designated accordingly; for example, Cereal Chemist(feed & flour mill)

Dairy Chemist(dairy)

Fermentologist

Food Chemist(food & bev., n.e.c.)

Nutritional Chemist

Soil Chemist

2111-114 ANALYTICAL CHEMIST(prof. & tech., n.e.c.)

DPT:031

analytical-research chemist; chemical analyst.

GED: 6 SVP: 8 EC: I 6 PA: L 4 7

Conducts basic research into analytical techniques, methodology and procedures, and applied research into composition and structure of elements, compounds and materials:

Carries out exact qualitative and quantitative analyses to determine relationship between molecular structure and the chemical and physical properties of organic and inorganic compounds by such means as absorption, emission, magnetic resonance and mass spectroscopy; chromatography, distillation, electrochemical, microchemical and gas analysis, fluorometry and titrimetry. Determines the rate of deterioration of stored chemicals and compounds. Conducts experiments and formulates analytical techniques, methodology and procedures based on observations and conclusions of experimentation. Develops techniques for use of different types of instruments; such as, spectrometers, electron microscopes and fluoroscopes. Prepares or supervises preparation of laboratory reports and specifications. Supervises and co-ordinates the work of technologists and technicians in analytical chemistry.

May design and construct apparatus needed for analysis.

2111-118 CHEMICAL OCEANOGRAPHER(prof. & tech., n.e.c.)

DPT:031

GED: 6 SVP: 8 EC: B 2 4 PA: L 4 6 7

Conducts research into the chemical laws, principles and techniques pertaining to the marine environment, including oceans, marine atmosphere and sea floor:

Investigates chemical composition of ocean water and sediments, and chemical reactions that occur in the sea. Studies interactions of components of sea water with atmosphere, sedimentary solids and other marine material. Conducts research into subsurface chemistry and distribution of noble gases and halogens in marine environment. Investigates processes that produce and alter chemical characteristics of ocean and effect of chemical composition of sea water on biological, geological and physical aspects of marine environment. Conducts experiments to determine chemical substances of water; such as, oxygen, nitrogen, carbon-dioxide, iron or radio-active elements. Prepares, or supervises preparation of laboratory reports and technical papers associated with a particular aspect of chemical oceanography. Supervises and co-ordinates the work of technologists and technicians.

2111-122 INORGANIC CHEMIST(prof. & tech., n.e.c.)

DPT:031

inorganic-research chemist.

GED: 6 SVP: 8 EC: I 6 PA: L 4 7

Conducts research to investigate inorganic chemical phenomena, develops programs to study extraction, recovery, purification and conversion of substances free or relatively free of carbon, and advises on their application to industrial processes or on improvement for commercial use:

Investigates inorganic compounds to determine their atomic structure

or other properties. Prepares substances; such as, boron, silicon, graphite, clay, glass and various metals and new inorganic compounds, and investigates possibilities of their application to industrial and commercial uses. Conducts experiments to develop or improve processing of inorganic materials; such as, alkaline earth elements, hydrogen, phosphorus and sulphur, by examining the mechanism of inorganic reactions, reaction kinetics and the synthesis of inorganic materials. Engages in studies related to activities; such as, the production of bulk chemicals used in the manufacture of fertilizers, explosives and inorganic materials useful as solid state electronic devices and semi-conductors. Analyzes metals and ores to determine composition, structure, chemical characteristics and economic value. Develops new or improved methods of production or processing of metals and alloys, and prepares chemical processing formulae. Prepares, or supervises the preparation of laboratory reports and specifications on experiments, development projects and processes, as a result of research. Supervises and co-ordinates the activities of technologists and technicians in a particular aspect of inorganic chemistry.

May be concerned with a product or process and be designated accordingly; for example,

Cement Analyst(cement, stone & clay)

Ceramic Chemist

Glass Chemist(glass)

Metallurgical Chemist

2111-126 ORGANIC CHEMIST(prof. & tech., n.e.c.) DPT:031
organic-research chemist.

GED: 6 SVP: 8 EC: I 6 PA: L 4 7

Conducts research to investigate organic chemical phenomena; develops programs to study, synthesize or modify carbon compounds; and advises on their application in industry and commerce:

Investigates such phenomena as structure of organic molecules and synthesis and compounding of chemical products. Combines organic compounds to make new substances or to duplicate substances found in nature. Develops new uses for chemical by-products. Carries out experiments designed to develop and improve, by chemical means, colour, texture, strength and durability of paint, rubber, wood, dye, petroleum and other organic compounds and by-products. Analyzes and tests dyes, paints, petroleum, polymers and other substances to determine their structure and other physical and chemical properties. Extracts, purifies and ferments animal and vegetable products. Processes foodstuffs and beverages and modifies them by preservatives, mould inhibitors, antioxidants, moisturizers, nutrients, colourants and other additives. Develops and improves methods of processing organic chemical products, such as those produced from petroleum and natural gas liquids, coal-tar distillates, fermentation processes, solvents, plastics and intermediates for other chemicals and chemical process industries. Modifies, converts or compounds organic chemicals for use in leather tanning, textile dyeing and finishing, petroleum and natural gas processing, rubber vulcanization, pulp and paper production, manufacturing explosives and propellants, soaps, detergents, oils, fats, waxes, paints and varnishes, toilet preparations, polishes and other products. Produces polymeric compounds; such as, elastomers, plastics and synthetic resins, fluorine, phosphorus, silicon and sulphur compounds. Prepares, or supervises preparation of laboratory reports and specifications on experiments, development projects and processes. Supervises and co-ordinates activities of technologists and technicians in a particular aspect of organic chemistry.

May be concerned with one product or process, and be designated accordingly; for example,

Chemist, Detergent(chem., n.e.c.)

Chemist, Dye(chem., n.e.c.)

Chemist, Industrial Alcohols(chem., n.e.c.)

Chemist, Leather(leather tan. & fur dress.)

Chemist, Petroleum(petrol. & coal prod.)

Chemist, Pharmaceuticals(pharm. & toil.)

Chemist, Plastics and Resins(chem., n.e.c.)

Chemist, Polymers(chem., n.e.c.)

Chemist, Protective Coatings(paint. & varn.)

Chemist, Textile(syn. fibres)

Chemist, Wood(chem., n.e.c.)

2111-130 PHYSICAL CHEMIST(prof. & tech., n.e.c.)

DPT:031

physical-research chemist.

GED: 6 SVP: 8 EC: I 6 PA: L 4 7

Conducts research to develop techniques and methods of measuring basic chemical and physical properties of organic and inorganic substances, using extensive theoretical knowledge of the laws and theories of physics, chemistry, and mathematics:

Conducts experiments with substances to develop techniques and methods of measuring properties; such as, specific rotation, density, index of refraction, X-ray diffraction patterns and heat reaction or combustion. Determines atomic and molecular weights of substances, including crystal forms, using thermo-magnetic analysis, microscopy measurement and other techniques. Examines molecules to ascertain structure, electrical energy and reaction to energy change, and measures heat of substances under varying conditions to ascertain physical and chemical characteristics. Interprets results of experimentation in fields; such as, chromatography, various types of spectroscopy, electron diffraction and chemical and electron microscopy. Develops techniques for use of instruments that measure heat, light and electricity. Studies rate of chemical reaction, and determines catalytic action required to increase reaction rate. Prepares, or supervises preparation of laboratory reports and analyses, and prepares specifications on experiments. Supervises and co-ordinates the work of technologists and technicians in various aspects of physical chemistry.

May be concerned with one aspect of physical chemistry and be designated accordingly; for example,

Electrochemist

Nuclear Chemist

2111-134 QUALITY-CONTROL CHEMIST(prof. & tech., n.e.c.)

DPT:031

control chemist; laboratory chemist.

GED: 6 SVP: 8 EC: I 6 PA: L 4 7

Analyzes and controls quality of raw materials, processes and finished products, in a laboratory of an industrial plant or other organization:

Performs duties similar to those of 2111-114 ANALYTICAL CHEMIST (prof. & tech., n.e.c.). Ensures that proper sampling techniques are carried out in plant so that accurate analysis of processes or products may be determined. Prepares, or supervises the preparation of special solutions used in testing. Interprets and prepares reports on test results to appropriate authorities and other interested personnel. Supervises and co-ordinates the work of technologists and technicians engaged in chemical analysis for quality control.

May specialize in analyzing specific materials and give evidence of findings before courts of law and official enquiries, and be designated, Forensic Chemist

2112-GEOLOGISTS AND RELATED OCCUPATIONS

This unit group includes occupations concerned with conducting research into the nature and history of the earth's crust; the physical nature of the atmosphere and hydrosphere; the distribution, circulation and properties of water; and the stratigraphic arrangement of the earth, to increase scientific knowledge and develop practical applications in such fields as mineral exploration and exploitation and water conservation. Activities include: identification and classification of fossils and precious stones, and provision of assistance in locating and developing oil, natural gas and mineral deposits.

2112-110 EXPLORATION GEOPHYSICIST(prof. & tech., n.e.c.)

DPT:031

GED: 6 SVP: 8 EC: B PA: L 4 5 6 7

Studies structure of subsurface rock formations to locate petroleum deposits, using seismograph, gravimeter, torsion balance, magnetometer, pendulum devices and electrical-resistivity apparatus to measure various characteristics of earth:

Conducts surveys to measure seismic, gravitational and magnetic forces affecting the earth, utilizing principles of physics, mathematics and chemistry. Analyzes data obtained from field studies to determine

composition and structure of subsurface materials to assist in locating petroleum and mineral deposits. Computes from instrument readings, charts and graphs, variations in physical forces existing at different locations, and interprets data to reveal subsurface structures likely to contain petroleum deposits. Prepares charts, profiles or subsurface contour maps. Determines desirable locations for drilling operation. Supervises field crews drilling shallow boreholes in designated terrain and collecting samples of soil for chemical analysis of hydrocarbon content. Collects and integrates geological and geophysical data to aid in evaluation and interpretation of information. Supervises preparation, and assists in developing data, for magnetic playback operations, checks for procedural errors, tape distortion, timing, instrumental deviation, and recommends modifications to playback equipment to facilitate programs.

2112-114 GEOLOGIST(prof. & tech., n.e.c.)

DPT:031

GED: 6 SVP: 8 EC: B 2 6 PA: M 2 3 4 7

Conducts research into nature and history of earth's crust to increase scientific knowledge, and to develop practical applications in mineral exploitation and engineering:

Explores areas to determine underground structure of the earth and the types of minerals or rocks that may be discovered. Studies rock cores and cuttings brought up by drills or rock samples obtained from outcrops of rocks. Classifies fossilized life forms found in geological formations, according to their chronology and genus. Studies the nature and effect of forces, such as erosion, sedimentation and glaciation, on the form of the earth's surface and sea beds. Records data in notebooks or on working maps and aerial photographs. Examines geological specimens, in a laboratory, using test instruments and apparatus, such as microscopes, fluoroscopes, spectroscopes and X-ray diffraction cameras. Investigates earth materials for certain chemical or other reactions by exposing them to high temperature and pressures, using furnaces and high pressure chambers. Interprets research data derived from laboratory studies or field explorations, and prepares geological reports and maps. Supervises and co-ordinates the work of technologists and technicians in various aspects of geological activity.

May conduct research into chemical composition of, and chemical change in earth's crust. May examine and interpret aerial photographs to identify rock types, structural trends, seam and fault alignments, indicating features of value for mineral exploitation. May investigate the structure of the earth's crust beneath oceanic depressions and study the material and form of the sea floor. May work as a consultant, and advise clients for a fee. May be concerned with one particular aspect of geological activity and be designated accordingly; for example,

Geochemist

Geomorphologist

Marine Geologist

Petrologist

Photogeologist

Stratigrapher

2112-118 GEOPHYSICIST(prof. & tech., n.e.c.)

DPT:031

GED: 6 SVP: 8 EC: B 2 6 PA: L 2 3 4 7

Studies the entire earth from its environment in space and its atmosphere, to the centre of its core, by exploration and research:

Makes precise measurements of earth's gravity and magnetic fields, using survey and geodetic instruments, such as transits, theodolites and other engineering instruments to determine variations in earth's gravitational field and provide data used in determining weight, size and mass of earth. Records seismic waves generated by natural earthquakes or man-made explosions, interprets reflected or refracted readings on electronic devices and prepares seismic cross-section charts to assist in locating oil or mineral-bearing structures. Prepares reports on exploration-field trips and laboratory work. Supervises and co-ordinates the work of technologists and technicians in various aspects of geophysical specialties.

May apply geophysical data to problems in various fields, such as telephony, telegraphy, radio broadcasting, navigation, mapping and prospecting. May study effects of glaciation on changing surface of the earth. May study formation of strata underlying continents and the forces at work in earth's crust. May study occurrence, origin and activity of volcanoes, the origin of igneous rocks and ore-forming processes occurring in the earth in the presence of igneous rock. May be concerned with a geophysical specialization and be designated accordingly; for example,

Aeronomist

Geodesist

Geomagnetician
Glaciologist
Tectonophysicist
Volcanologist

2112-122 HYDROLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B PA: L 4 7

Conducts research into the occurrence, distribution and circulation of waters of the earth; chemical and physical properties of water and the relationship between water and its environment, including its relationship with living things:

Studies distribution, disposition and development of waters of land areas, including form and intensity of precipitation and modes of return to ocean and atmosphere. Devises flood-warning systems, and assists in the design and operation of flood-detention reservoirs, dykes and floodways. Designs structures to regulate streamflow and studies streamflow patterns to minimize damaging effects of erosion and sedimentation, utilizing knowledge of evaporation, snow, rainfall and land use. Conducts research in groundwater movement and inventory methods to determine extent of groundwater supplies, water flow, disposition of sediment, manner of recharge and safe rates of withdrawal. Supplies basic data to assist in determining feasibility of developing hydro-electric power sites. Applies knowledge of hydrologic principles to soil-plant-water relationships to assist agronomists and farmers to achieve highest possible level of food and fibre production. Assist health authorities in developing and applying effective remedies for pollution and water-borne disease. Advises appropriate authorities concerning available water supplies to assist in determining priorities, alternative allocations and short-and long-range forecasts of supply and demand. Prepares, or supervises the preparation of various technical reports and studies. Supervises and co-ordinates the work of technologists and technicians in various aspects of hydrological studies.

2112-126 MINERALOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B PA: L 4 7

Examines, analyzes and classifies minerals, gems and precious stones: Isolates specimen from ore, rocks or matrices. Makes microscopic examination to determine shape, surface markings and other physical characteristics. Performs physical and chemical tests, using x-ray diffraction and optical methods to examine specimens and determine composition and type of crystalline structure. Identifies and classifies samples. Develops data and theories on origin and occurrence of minerals, and advises on their possible use. Supervises and co-ordinates the work of technologists and technicians. May be concerned with a particular aspect of mineral activity and be designated, Gemmologist.

2112-130 PALEONTOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B PA: L 4 7

Studies fossilized remains of plants and animals found in geological formations to trace the evolution and development of past life and identify geological formations according to nature and chronology: Recovers and assembles fossilized specimens, notes their position, and classifies them according to their probable botanical or zoological age. Prepares reports on findings as an aid to location of natural resources, such as petroleum-bearing formations. Organizes scientific expeditions and supervises and co-ordinates the work of technologists and technicians in removing fossils from deposits and matrix rock formations.

May be concerned with a particular activity in paleontology, such as the study of plant fossils and fossilized micro-organisms, and be designated accordingly; for example, Micropaleontologist Paleobotanist

2112-134 PETROLEUM GEOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B 2 6 PA: M 2 3 4 7

Explores and charts stratigraphic arrangement, composition and structure of earth to locate petroleum and natural gas deposits: Studies well logs, analyzes cores and cuttings from well drillings, and interprets data obtained by electrical well logging and other subsurface surveys, using seismographic and other equipment to

identify earth strata. Examines aerial photographs, evaluates results of geophysical prospecting, and prepares surface and subsurface maps and diagrams depicting stratigraphic arrangement and composition of earth and probable deposits of petroleum and natural gas. Estimates oil reserves in proven or prospective fields. Consults with petroleum engineers concerning drilling and production methods. Recommends action for coring, testing, logging, casing, perforating, shooting, acidizing, fracturing of oil wells, and abandoning of non-productive wells. Recommends acquisition, retention or release of property leases or contracts. Supervises and co-ordinates the work of technologists and technicians in various aspects of petroleum geological work. May direct drilling of shallow exploratory wells. May investigate composition, structure and history of rock masses. May act as a consultant and advise clients for a fee.

2112-138 SEISMOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I PA: L 4 6

Conducts research into the structure of the earth by studying mechanical waves generated by artificial means or by natural earthquakes:

Establishes network of seismic observation posts to obtain data, or uses existing facilities. Obtains and analyzes data recorded from seismographs and other special devices. Studies sources of seismic signals and identifies their location, magnitude, depth and physical nature. Studies strong motions in earth, close to earthquake sources, in order to obtain technical data needed for the design of structures, such as buildings, bridges and dams, which must be protected against earthquake damage. Interprets structure and physical properties of earth from analyzed data, and prepares special maps, charts, graphs, and publications.

May study problems involving the detection and measurement of underground nuclear explosions.

2113-PHYSICISTS

This unit group includes occupations concerned with conducting theoretical and experimental research to extend the knowledge of the science of physics, and applied research related to the scientific and commercial utilization of heat, light, acoustics, electricity and magnetism, atoms, molecules and nuclei and other physical phenomena. Activities include: analyzing and postulating, in mathematical terms, the results of experiments; predicting results of experiments designed to detect and measure previously unobserved physical phenomena; synthesizing research data to formulate or substantiate new theories, concepts or laws; studying bodies at rest and in motion; conducting experiments to discover the fundamental particles of matter, and observing the forms of energy and their interaction and effect on matter. Biophysicists are classified in Unit Group 2133. BIOLOGISTS AND RELATED SCIENTISTS.

2113-110 ACOUSTICS PHYSICIST(prof. & tech., n.e.c.) DPT:031
acoustician.
GED: 6 SVP: 8 EC: I PA: L 5 6 7

Conducts research into phenomena of hearing, sound reproduction and vibration to increase scientific knowledge, and applies this knowledge to the design and development of scientific and commercial equipment and processes:

Studies propagation and transmission of sound in subsonic, ultrasonic and auditory frequency ranges. Performs experiments to determine effects of sound and vibration on materials. Studies physiological and psychological effects of sound on human beings. Investigates methods of minimizing noise in urban areas, industrial and other establishments, aircraft and automobiles. Prepares, or supervises preparation of scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians. May develop underwater detection devices for ships and submarines. May devise acoustical systems for auditorium, radio and television studios. May design loudspeakers, amplifiers, recorders and other equipment used in sound reproduction and amplification.

2113-114 ASTRONOMER(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B 2 PA: L 2 3 4 7

Observes, analyzes and interprets data on positions, motions, composition, structure and characteristics of celestial bodies to extend the knowledge of the origin, evolution and eventual destiny of the universe:

Observes celestial bodies from ground observation stations or instrument packages lofted by balloon, rocket or orbiting satellite, using x-ray detectors, and radio or optical telescopes equipped with cameras, spectrographs, photometers, radiometers and other devices. Determines mass, position, distance, motion, composition and structure of members of the solar system, stars, stellar systems, interstellar matter, pulsars, galaxies and quasars, and interprets information obtained in terms of basic physical laws. Calculates orbits of various celestial bodies observed. Conducts research on statistical theory of motions of celestial bodies and analyzes spectra of celestial bodies. Studies structure and evolution of stars, stellar systems and universe, using digital computers for reduction and analysis of data and testing of physical theories (mathematical models) relating to the universe. Prepares, or supervises preparation of, scientific papers and reports. Supervises the work of technologists and technicians.

May prepare mathematical tables for use by air and sea navigators, showing positions relative to earth of sun, moon, planets and stars, at given times. May design and improve mechanical, optical and electronic instruments for astronomical research. May specialize in measuring co-ordinates of celestial bodies; studying motion of objects in the solar system in relation to action of gravity and calculating orbits of artificial satellites and paths of guided missiles; measuring temperature and luminosity, and studying the chemical composition of celestial bodies; observing the distribution and motion of galaxies, theory of relativity, origin, age, nature of the universe, and be designated accordingly; for example,

Astrometrist

Astronomer, Celestial Mechanisms

Astrophysicist

Cosmologist

Radio Astronomer

2113-118 ATOMIC AND MOLECULAR PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I PA: L 5 6 7

Conducts research into the structure and behaviour of atoms and molecules, and some aspects of nuclei, to increase scientific knowledge, and devises methods of applying this knowledge to the design and development of scientific equipment and processes:

Observes the normal, excited and ionized states of atoms and molecules, using atomic and molecular beam resonance techniques. Measures and analyzes the intensity and time delay in the emission of radiation, using X-ray, ultra-violet and infra-red spectrometers. Records the electron-paramagnetic resonance of atoms and molecules, using magnetic-resonance spectrometers. Studies the force of impact and scattering of particles in atomic collisions, utilizing on-line computers. Determines the chemical bonds in molecules by studying the structure of atoms and molecules and its unstable states. Formulates theories and laws, in conjunction with research, to describe physical properties that govern the behaviour of atoms and molecules, in matter. Prepares, or supervises preparation of, scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a particular aspect of atomic or molecular physics and be designated accordingly; for example,

Chemical Physicist

Chemical Spectroscopist

Optical Spectroscopist

2113-122 ELECTRICITY AND MAGNETISM PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I PA: L 5 6 7

Conducts research into the nature and properties of electricity and magnetism to increase scientific knowledge, and applies this knowledge to the design and development of scientific and commercial equipment and processes:

Conducts research into electrostatics, current electricity, superconductivity, piezoelectricity, magnetism, electromagnetic waves and other phenomena. Investigates problems related to discovery of new sources of electrical energy and to generation and transmission of electrical power. Conducts experiments to determine electric and

magnetic properties of materials and their utilization in electromagnetic devices. Develops new techniques for generation, transmission and reception of electromagnetic waves to improve telephone, telegraph and other electrical systems. Prepares, or supervises preparation of, scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians.

May design and develop special-testing devices for measuring electrical quantities and determining properties of magnetic materials. May assist in design and development of transformers, electric motors and power plants. May be concerned with a particular aspect of electricity and magnetism physics and be designated accordingly; for example,

Magnetism Physicist

Microwave Physicist

2113-126 ELEMENTARY-PARTICLE PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I PA: L 5 6 7

Conducts research into the structure and behaviour of elementary particles, and the nature and mechanism of forces between the elementary particles to increase scientific knowledge, and applies this knowledge to the design and development of scientific and commercial equipment and processes:

Develops devices to accelerate elementary particles to extremely high energies, for detection and identification. Measures the mass spectrum, spins and other properties of the elementary particles, using on-line computers, counters, spark chambers, wire chambers, proportional counters and other electronic devices. Supervises and co-ordinates the work of technologists and technicians. Prepares, or supervises preparation of, scientific papers and reports.

May be concerned with conducting research of a theoretical nature into the structure and basic dynamics involving elementary particles and be designated accordingly; for example,

Elementary-Particle Experimentalist

Experimentary-Particle Theorist

2113-130 FLUIDS PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I PA: L 5 6 7

Conducts research into the structure and behaviour of liquids and gases to increase scientific knowledge, and applies this knowledge to the design and development of scientific and commercial equipment and processes:

Conducts experiments to measure viscosity, diffusion, specific heat, thermal conductivity and other physical properties of liquids and gases. Investigates structure of liquids, using X-ray and neutron scattering. Constructs models of intermolecular forces and devises theories to understand and explain these properties. Prepares, or supervises preparation of, scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians.

2113-134 HEALTH PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B 6 7 PA: S 5 6 7

Conducts research, and training and monitoring programs to protect plant, laboratory personnel and general public from radiation hazards:

Conducts research into radiation exposure limits for personnel, safe work methods and decontamination procedures to develop standards and tests to ensure radiation is not in excess of permissible standards. Designs or modifies detectors, counters, monitors and other protective devices. Assists in developing standards of permissible concentrations of radioisotopes in liquids and gases. Directs testing and monitoring of radiation equipment and recording of personnel and plant area radiation-exposure data. Consults with scientific personnel regarding techniques to determine that equipment or plant design conforms to health-physics standards for protection of personnel. Prepares, or supervises preparation of, scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians.

May advise public authorities on methods of dealing with radiation hazards and on procedures to be followed in radiation incidents. May assist in civil defense planning.

2113-138 MECHANICS PHYSICIST(prof. & tech., n.e.c.) DPT:031
rheologist.
GED: 6 SVP: 8 EC: 1 PA: L 5 6 7

Conducts research into the action of forces on matter, develops theories and laws to increase scientific knowledge, and applies this knowledge to design and development of scientific and commercial equipment and processes:

Conducts research into motion and condition of equilibrium of bodies as applied to ballistics, rheology, aerodynamics, vibration, high pressure and vacuum. Computes velocities and trajectories of missiles and observes the effect on them of gravitation, atmospheric resistance, friction and other forces. Records contact of shock waves on matter to measure the dynamic and input strengths of materials and the distribution effects of vibration. Prepares, or supervises preparation of, scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians.

May design or construct equipment for a particular experiment. May be concerned with a particular experiment. May be concerned with a particular aspect of mechanical physics and be designated accordingly; for example,

Aerodynamicist

Ballistician

Physical Aerodynamicist

2113-142 NUCLEAR PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: 1 PA: L 5 6 7

Conducts research into the structure and behaviour of atomic nuclei, and the nature of nuclear forces and elementary particles to extend the knowledge of the science of nuclear physics, and applies this knowledge to the design and development of scientific and commercial equipment, processes and safety devices:

Performs experiments with accelerators and reactors which are capable of making radioactive nuclei and producing energetic beams of nuclei which react with the other nuclei to produce isotopes and short-lived states of nuclei and particles, not otherwise present in a terrestrial environment. Investigates and classifies properties of nuclei and determines their effect and penetration through material. Improves or implements radiation-protection methods. Constructs new equipment or improves existing equipment to analyze and record effects of energetic particles and radiation. Prepares, or supervises preparation of, scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a particular aspect of nuclear physics and be designated accordingly; for example,

Accelerator Physicist

Alpha-Spectroscopy Physicist

Beta-Spectroscopy Physicist

Cosmic-Ray Physicist

Nuclear-Reactor Physicist

Theoretical-Nuclear Physicist

2113-146 OPTICS PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: 1 PA: L 5 6 7

Conducts research into the sources, propagation and effects of light, to increase scientific knowledge, and applies this knowledge to the design and development of scientific and commercial equipment and processes:

Analyzes interference, diffraction, absorption and other properties of light. Analyzes problems concerning maser and laser devices which utilize microwave and optical beams of ultra-high intensity. Applies results of experiments to improve fluorescent lighting, standardizing colour in manufacture of products, and the design of new or improved optical devices. Conducts experiments in areas dealing with films and coatings, colour, illumination, photography, spectroscopy and physical optics. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with instrumentation related to optical physics and be designated,

Optical-Instrument Specialist

2113-150 PHYSICAL OCEANOGRAPHER(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B 2 4 PA: L 4 5 6 7

Carries out research on the mechanisms of energy transfer through the sea and the physical interaction of the sea with its surroundings:

Studies density, salinity, bathymetry, sea ice topography, transmission of light and sound and other physical aspects of the ocean. Measures the structure of the ocean by instrumentation. Observes and analyzes surface and sub-surface movement of the ocean waves, tides, small and large scale circulations, density changes and related factors. Studies all aspects of wave motion on and within the sea due to meteorological, geological or geophysical causes. Investigates the thermo-dynamic properties of the sea. Applies physical oceanographic concepts to small and large scale ocean engineering problems such as pollution dispersal, sea ice pressure on ships, wave forces, harbour design and tidal power. Prepares, or supervises preparation of, reports and observations. Supervises and co-ordinates the work of technologists and technicians.

2113-154 PLASMA PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: 1 PA: L 5 6 7

Conducts research into the properties and dynamics of ionized gases to increase scientific knowledge, and applies this knowledge to the design and development of scientific and commercial equipment and processes:

Studies the behaviour of gases in electrical and magnetic fields. Observes and studies the propagation and scattering of electromagnetic waves through plasma. Investigates plasma containment, stability, propagation of small oscillations, shock waves, direct conversion of kinetic into electrical energy and plasma propulsion in interplanetary travel. Carries out research on devices which produce power by nuclear fusion in plasmas. Prepares, or supervises preparation of, scientific reports and papers dealing with a particular aspect of plasma physics. Supervises and co-ordinates the work of technologists and technicians.

2113-158 SOLID-STATE PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: 1 PA: L 5 6 7

Conducts research into the structure, character and physical properties of solids to obtain information regarding their behaviour, and formulates laws governing their physical processes to increase scientific knowledge, and applies this knowledge to the design and development of scientific and commercial equipment and processes:

Conducts experiments to observe and identify crystal patterns by means of X-ray crystallography. Investigates the thermal, magnetic and electronic properties of ceramics, semi-conductors, and all types of crystals, using spectrometers, X-ray generators, electron microscopes and other optical devices. Analyzes the effect of temperature and pressure on solids to determine metal elasticity. Determines molecular structure of polymers, using acoustic and electromagnetic waves. Studies transport properties of electrons in solids to measure conductivity, mobility and relaxation effects and scattering. Studies the optical properties of crystals by reflectivity, transmission and luminescence of light. Examines elementary excitations in solids by means of electromagnetic waves. Determines magnetic properties of solids by magnetic resonance, neutron diffraction and susceptibility measurements. Applies results of research to problems of metal fatigue, lattice defects, disk locations and colour centers. Supervises and co-ordinates the work of technologists and technicians.

May design and develop equipment for experiments. May be concerned with a particular aspect of solid state physics and be designated accordingly; for example,

Crystal Physicist

Metal Physicist

Semi-Conductor Physicist

2113-162 THERMAL PHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: 1 PA: L 5 6 7

Conducts research into the nature and properties of heat, and the effects of temperature changes on the properties of materials to extend the knowledge of the science of thermal physics, and applies this

knowledge to the design and development of scientific and commercial equipment and processes:

Devises and conducts experiments to study the propagation of thermal energy. Records the effects of high temperatures on the physical properties of solids, liquids and gases. Observes superconductivity, superfluidity and other properties of matter at low temperatures. Devises expansion engines, adiabatic demagnetizers and cooling devices for production of liquefied gases, rocket propellants and other material used in quick-freezing processes. Formulates theories to describe the effects of temperature changes on the physical properties of matter. Applies results of experiments to problems of practical importance such as thermal insulation in jet engines or the storage and transfer of liquid gases. Develops methods and equipment for measuring extremely high or low temperatures. Prepares, or supervises preparation of, scientific papers and reports. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a particular aspect of thermal physics and be designated accordingly; for example,

Cryogenics Physicist

High-Temperature Physicist

2113-199 OTHER PHYSICISTS

This group includes physicists, not elsewhere classified; for example, those who conduct research in the theory of relativity and its applications. An example of an occupational title covered by this residual group definition is:

Relativity Physicist (prof. & tech., n.e.c.)

2114-METEOROLOGISTS

This unit group includes occupations concerned with conducting pure research into atmospheric phenomena to increase the body of meteorological knowledge; and applied research to develop theories, laws, methodology and techniques for more accurate weather analysis and forecasting; and studying and reporting on climatic conditions. Areas of specialization include: climatology and dynamic, industrial, physical or synoptic meteorology.

2114-110 METEOROLOGIST (prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: B 2 3 PA: L 4 7

Observes, records and interprets atmospheric, weather and climatic conditions and uses data to analyze and forecast weather patterns and movements or to conduct pure and applied research into recording and forecasting methods and equipment:

Obtains data on atmospheric conditions, through use of balloons, rockets and artificial earth satellites and techniques; such as, spectroscopy, hygrometry, daylight and infra-red photography, radar and radio, and directs processing of this data. Draws isobars on surface maps indicating weather fronts, areas of precipitation, high and low barometric pressure, and predicted movement of fronts. Analyzes and interprets synoptic and prognostic charts, maps, and studies data; such as, barometric pressures, temperatures, humidity, wind velocities and areas of precipitation, obtained from meteorological stations, to prepare weather forecasts for the general public, aviation, shipping, agriculture and interested agencies or business establishments. Analyzes composition, structure and dynamics of the atmosphere; such as, directions and speed of air movement, pressures and temperatures. Investigates the nature of solar and terrestrial (infra-red) radiation and its effects on the atmosphere. Studies physical nature and properties of solid and liquid particles suspended in the atmosphere and examines phenomena; such as, process of cloud formation, precipitation and electrical disturbances. Studies physical laws related to air currents, climatic composition, and electrical, acoustical and optical properties. Examines climatic conditions of the earth or of a particular region by analyzing meteorological observations made over extended periods to prepare long-range weather forecasts. Supervises and co-ordinates the work of technologists and technicians in various aspects of meteorological activities.

May conduct experiments in fog dispersal, rainmaking and other types of weather control. May conduct research into problems; such as, smoke control and air pollution. May act as a consultant and advise clients for a fee. May specialize in a particular phase of meteorological activity and be designated accordingly; for example,

Climatologist

Dynamic Meteorologist

Industrial Meteorologist

Physical Meteorologist

Synoptic Meteorologist

2117-PHYSICAL SCIENCES TECHNOLOGISTS AND TECHNICIANS

This unit group includes occupations as described under master titles, 01-220 PHYSICAL SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.) and 01-210 PHYSICAL SCIENCES TECHNICIAN (prof. & tech., n.e.c.) concerned with carrying out technological and technical functions in a physical science specialization, such as physics, chemistry, geology, geophysics, meteorology or astronomy, using a knowledge of scientific and mathematical principles and laboratory practises. Non-medical life sciences technologists and technicians are classified in Unit Group 2135, LIFE SCIENCES TECHNOLOGISTS AND TECHNICIANS. Technologists and technicians in the field of medicine and health are classified in Minor Group 315, OTHER OCCUPATIONS IN MEDICINE AND HEALTH. Engineering technologists and technicians are classified in Unit Group 2165, ENGINEERING TECHNOLOGISTS AND TECHNICIANS.

Physical Sciences Technologists

2117-110 through 2117-199

2117-110 CHEMICAL TECHNOLOGIST (prof. & tech., n.e.c.)

DPT:231

GED: 5 SVP: 7 EC: I 5 6 7 PA: L 4 5 6 7

Performs technological functions in chemistry, primarily in support of research, design, and developmental activities:

Performs duties as described under master title, 01-220 PHYSICAL SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Applies knowledge of the principles of chemistry to recognize, study and suggest solutions to problems encountered. Conducts experiments, under supervision of chemists, concerned with temperatures, pressures, reactions and other chemical changes to improve quality, quantity and other characteristics of chemically-produced products. Determines procedures and equipment to be used, and undertakes appropriate tests or other operations to ensure that type, quality, quantity and weight of compounds used in laboratories, processes, or research are in accordance with pre-determined instructions or formulae. Investigates processes to convert raw materials into consumer products, using chemical techniques. Supervises and co-ordinates the work of technicians and subordinate tradesmen.

May be concerned with chemical technological activities related to a specialization, and be designated accordingly; for example,

Chemical-Design Specialist

Chemical-Instrumentation Technologist

Chemical-Process Analyst

Chemical-Research Technologist

Head Analyst, Chemical Laboratory

Laboratory Supervisor (chem., n.e.c.)

Product-Evaluation Technologist (chem., n.e.c.)

2117-114 FOREST-PRODUCTS TECHNOLOGIST (prof. & tech., n.e.c.)

DPT:231

GED: 5 SVP: 7 EC: B PA: L 4 7

Carries out technological functions to assist scientists and engineers in conducting research on the structure, properties and uses of wood, and applies results to design and development of new methods of processing and marketing forest products and by-products:

Performs duties as described under master title, 01-220 PHYSICAL SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Tests, grades and classifies species of wood according to properties such as, colour, strength, elasticity and hardness, to determine most productive use for each type. Dries, treats and cures wood to increase resistance to wear, fire, acid, fungi and insects, using kilns, preservatives, electric drying techniques and exposure to air. Investigates processes to convert raw wood into consumer products such as lumber, alcohol, veneer,

plywood, fibreboard and other commercially useful products. Experiments with wood wastes and residues to develop new products and conserve supplies:

May study plant organization and business practices associated with the manufacture, distribution and sale of forest products. May be concerned with a particular aspect of forest technology and be designated accordingly; for example,

Laboratory Technolo Laboratory Technologists (veneer & plywood)
Production Technologist (sawmill)

2117-118 GEOLOGICAL TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: O 7 PA: L 4 5 6 7

Performs technological functions in geology, primarily in support of exploration and research:

Performs duties as described under master title, 01-220 PHYSICAL SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Analyzes observations of elevations, latitude and irregularities of terrain, using data obtained from geological surveys, computes data and draws contour maps to represent graphically location and extent of rock formations favourable to oil or mineral deposits. Develops and perfects new or improved methods of extracting minerals from rocks and ores to provide mineral concentrates for specific requirements of geological research projects. Supervises and co-ordinates the work of subordinate technicians and tradesmen.

May be concerned with a particular aspect of geological technology and be designated accordingly; for example,

Geochemical Technologist
Geological-Prospecting Technologist

2117-122 GEOPHYSICAL TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: B PA: L 4 5 6

Performs technological functions in geophysics and petroleum geology, primarily in support of exploration and research:

Performs duties as described under master title, 01-220 PHYSICAL SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Assist in measuring earth's gravity and magnetic fields, using transits, theodolites and other surveying instruments to determine variations in earth's gravitational field and provide other geophysical data. Directs use of seismographic-recording apparatus, and analyzes seismographic recordings made as result of predetermined explosions to provide data for delineating contours of sub-surface stratigraphy which may reveal earth formations favourable to petroleum or natural gas deposition. Verifies accuracy of calculations and directs preparation of charts or profiles from completed data. Supervises and co-ordinates the work of subordinate technicians and tradesmen.

May be concerned with a particular aspect of geophysical or petroleum geology technology and be designated accordingly; for example,

Computer, Geodetic Survey
Geophysical-Prospecting Technologist
Petroleum-Geology Technologist
Seismology Technologist, Petroleum Geology

2117-126 LABORATORY PHYSICAL SCIENCE TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: I PA: L 4 5 6 7

Performs technological functions in physics, primarily in support of research, design and development activities:

Performs duties as described under master title, 01-220 PHYSICAL SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Carries out experiments, tests and analyzes in mechanics, heat, optics, sound, electricity and magnetism, electronics, nuclear and other branches of physics to investigate the properties of matter and propagation of energy, using quantometers, spectrometers, densitometers and other technical instruments. Applies knowledge of principles of physics to recognize, study and suggest solutions to problems encountered. Supervises and co-ordinates the work of subordinate technicians and tradesmen.

May be concerned with a particular aspect of physical science technology and be designated accordingly; for example,

Optics Technologist
Spectroscopic Technologist

2117-130 TEXTILE TECHNOLOGIST(prof. & tech., n.e.c.)

DPT:231

GED: 5 SVP: 7 EC: I PA: L 4 7

Performs technological functions in various aspects of design, production and quality control of textile products:

Analyzes fibres, designs fabrics and prepares specifications for their production. Selects and develops dyestuffs and dyeing formulae for the production of a given shade of fabric. Obtains and analyzes test data and sets and maintains standards of quality. Supervises production in textile plants in such departments as spinning, weaving, knitting, dyeing and finishing. Establishes production allocation schedules, maintains and supervises preparation of records and analytical reports, and co-ordinates activities between purchasing and sales. Supervises and co-ordinates the work of subordinate technicians and tradesmen. See also definition for term title, 02- 420 TECHNOLOGIST (prof. & tech., n.e.c.).

May assist and advise customers with problems. May be concerned with a particular aspect of textile technology, and be designated accordingly; for example,

Dyeing and Finishing Technologist
Fabric-Design Technologist
Production and Quality-Control Technologist
Textile-Colour Technologist

2117-199 OTHER PHYSICAL SCIENCE TECHNOLOGISTS

This group includes physical science technologists, not elsewhere classified; for example, those who assist in various stages of physical-metallurgy research. A typical example of an occupational title covered by this residual group definition is,

Physical-Metallurgical Technologist(prof. & tech., n.e.c.)

Physical Sciences Technicians 2117-240 through 2117-299

2117-240 ASSAYER(prof. & tech., n.e.c.) DPT:231

GED: 4 SVP: 6 EC: I PA: L 4 5 6 7

Tests ores and alloys, and analyzes test results to determine value and properties of precious metals, using chemical solutions and chemical or physical laboratory equipment:

Separates precious metals from dross materials by solution, flotation or other liquid processes, or by dry methods such as application of heat. Weighs residues on balance scale to determine proportion of pure gold, silver, platinum and other precious metals. Supervises and co-ordinates the activities of workers engaged in sampling, grinding and tending furnaces, and writes reports.

May test and analyze certain types of precious metals and be designated; for example,

Gold-and-Silver Assayer

2117-244 WATER-PURIFICATION TECHNICIAN(waterworks) DPT:261

GED: 4 SVP: 6 EC: I 7 PA: S 4 5 6 7

Performs laboratory tests, according to prescribed procedures, for quality and process control in public water-purification plant:

Sets up and adjusts laboratory apparatus such as, agitators, centrifuges and condensers. Analyzes water samples to determine condition, and amount of chemical treatment required. Determines acidity and colour of water by standard colour-reaction tests. Tests water samples in various stages of purification to determine amounts of impurities in water using conductivity meter and other testing apparatus. Performs qualitative test on raw chemicals used in purification process to ensure that they meet prescribed specifications and standards. Conducts advanced investigation into more economical purification methods and procedures in conjunction with chemists or engineers. Prepares chemical solutions according to standard formulae. Records test results on prescribed forms and writes tests reports describing procedures used. Prepares graphs, charts and reports, when required. Cleans and sterilizes laboratory apparatus, as required.

2117-248 CHEMICAL TECHNICIAN (prof. & tech., n.e.c.)

DPT:361

GED: 4 SVP: 6 EC: I 5 6 7 PA: L 4 5 6 7

Carries out a limited number of technical functions in chemistry, primarily in relation to operation, maintenance and quality and process control activities:

Performs duties as described under master title, 02-210 PHYSICAL SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Sets up and operates small-scale chemical pilot-plant equipment, under laboratory conditions, for testing chemical methods and processes, following specifications and guidance from research chemists and engineers. Mixes chemical solutions, as directed, for use in tests. Tests compounds used in various processes for strength, specific gravity and other factors. May be concerned with a particular technical activity related to chemistry and be designated accordingly; for example,

Chemical-Laboratory Technician(chem., n.e.c.)

Household-Products Technician(chem., n.e.c.)

Laboratory Tester

Pilot-Control Operator(chem., n.e.c.)

Quality-Control Technician(chem., n.e.c.)

2117-252 GEOLOGICAL TECHNICIAN (prof. & tech., n.e.c.)

DPT:361

GED: 4 SVP: 6 EC: B 4 6 PA: M 2 3 4 7

Carries out a limited number of technical functions in geology, primarily in relation to analysis, maintenance and repair activities:

Performs duties as described under master title, 01-210 PHYSICAL SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Assists in analyzing rocks and minerals, using gravimetric, titrimetric and other instruments to provide compositional data for scientists engaged in geological, mineralogical and geochemical studies. Performs preliminary classification studies of various fossilized-life forms found in geological formations, according to chronology and genus. Prepares and collects geological samples for analysis, during field expeditions. Maintains and repairs equipment, using hand and power tools and referring to schematic diagrams of equipment.

May be concerned with a particular aspect of geology and be designated accordingly; for example,

Geochemical Technician

Technical Assistant, Geology

2117-256 HYDROLOGY TECHNICIAN (prof. & tech., n.e.c.)

DPT:361

GED: 4 SVP: 6 EC: B PA: M 4 7

Carries out a limited number of technical functions in hydrology, primarily in relation to measurement, quality control and maintenance activities:

Performs duties as described under master title, 01-210 PHYSICAL SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Lowers flowmeter into moving water to obtain rate of flow at surface and at various depths. Verifies the accuracy of automatic water-level recorders by calibrating them against readings obtained from portable flowmeters. Computes mean cubic-foot-per-second flow, using arithmetic tables and water-flow tables. Prepares graphs, charts and other hydrographic data to depict trends in water-flow pattern at metering stations. Obtains water samples for laboratory analysis using monometer tube and other equipment. Measures water levels in designated wells to ascertain water storage in ground and effect of rainfall. Repairs or replaces defective recorders.

2117-260 METEOROLOGICAL TECHNICIAN (prof. & tech., n.e.c.)

DPT:361

GED: 4 SVP: 6 EC: B PA: L 4 7

Carries out a limited number of technical functions in meteorology, primarily in support of operational activities to provide information for weather reports and forecasts:

Observes and reports, at periodic intervals, temperature, pressure, humidity and wind speed and direction, using hydrogen-filled balloons, radiosondes and other meteorological instruments. Takes observations of clouds including type, height and amount and the presence or absence of snow or rain. Plots weather charts recording isobars, isotherms, temperatures and other data received from radiosondes and transmitted to ground stations, or provides data for plotting by computer. Transmits information to weather-forecast centres throughout world, using international code.

May make observations of sea ice from specially-fitted aircraft, using mapping and doppler navigational radar, high-speed computers and closed television-monitoring systems. May grid and position photographs from satellites in orbit around the earth and prepare location data of orbits passing over their operational areas and compute time of orbits. May plot and analyze charts and graphs to provide special meteorological data for research scientists in cloud seeding, air turbulence, statistical studies and other fields. May provide special transcripts or verbal reports of data, using graphs, charts and publications, for newcasts or airlines. May be concerned with obtaining and processing data in specific areas of meteorological science and be designated accordingly; for example,

Chart Plotter

Climatological Technician

Ice Observer

Satellite Technician

Upper-Air Technician

2117-264 LABORATORY PHYSICAL SCIENCE

TECHNICIAN (prof. & tech., n.e.c.)

DPT:361

GED: 4 SVP: 6 EC: I 5 7 PA: L 4 5 6 7

Carries out a limited number of technical functions in physics, primarily in relationship to operation, maintenance and quality-control activities:

Performs duties as described under master title, 01-210 PHYSICAL SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Sets up and operates tensile strength testers, plastometers, hydraulic presses and other special test equipment to test wood, metal, rubber, plastic, glass, ceramic and other products. Examines metal and alloy samples, with ultrasonic, cyclograph and magnetic flux equipment to detect internal fractures, impurities and similar defects, and to sort and grade metal. Tests samples in pressure devices, hot-acid baths and other apparatus to determine strength, hardness, elasticity and other characteristics of metal. Maintains and repairs test equipment, using hand and machine tools and manufacturer's schematic diagrams for guidance.

May be concerned with a particular technical aspect of physics and be designated accordingly; for example,

Heat-Metal Technician(iron & steel)

Physical Tester, Ceramics

Rubber-Laboratory Technician(rubber)

2117-268 TEXTILE TECHNICIAN (prof. & tech., n.e.c.)

DPT:361

GED: 4 SVP: 6 EC: I PA: L 4 7

Examines, measures, photographs and tests synthetic fibre samples to facilitate quality control of forming, treating and texturing processes, performing any combination of the following duties:

Dips several twisted threads in melted wax and directs stream of cold water over thread to congeal wax. Slices threads crosswise, using microtome. Dissolves wax, using solvent, and positions thread sample on microscopic slide. Inserts slide in microscope and photographs sample, using standard photographic techniques. Develops, prints, labels photographs for examination of structure and other characteristics of thread. Determines tensile strength of thread samples, using device that draws material between two jaws until breakage occurs. Measures cross-sectional area of thread samples, using planimeter. Operates winding machine to wind textile sample packages (bobbins) or skeins for subsequent tests. Operates knitting machine to knit tubes (hose samples) for dye-testing purposes. Immerses sample in water, corrosives, or cleaning agents to detect shrinkage or damage. Places thread samples in dye bath to evaluate permeability of dye, and exposes samples to controlled light sources to ascertain fade resistance. Measures other yarn characteristics, such as friction coefficient and tension variables, using electronic measuring devices with automatic read-out facilities. Prepares and submits reports of findings to production personnel to facilitate quality control of product. See also definition for term title, 02-410 TECHNICIAN (prof. & tech., n.e.c.).

May be concerned with a particular aspect of textile production and be designated accordingly; for example,

Process-Laboratory Operator

Synthetic-Fibre-Sample Tester

2117-272 GEOPHYSICAL-EQUIPMENT OPERATOR,
AIRBORNE(prof. & tech., n.e.c.) DPT:362
aerial-survey operator
 GED: 4 SVP: 6 EC: B 2 3 4 PA: M 4 7

Operates electronic equipment in aircraft to obtain and record geophysical data to be analyzed and used by others, and services electronic equipment between flights: Calibrates magnetometers, scintillometers, infra-red and other sensors in aircraft prior to flight to ensure that they are prepared for operation. Signals pilot, by intercommunication, that equipment is ready for use, and awaits signal from pilot to begin recording of survey data. Starts equipment, when ordered, and ensures that marking pens and other recording devices are functioning properly. Records data in operational log, noting special settings required by instructions or unusual observations, using pencil and tape recorder. Reviews and summarizes data upon completion of flight. Removes recorded tapes from each instrument and examines data for clarity and completeness. Services equipment, as required, after making systematic examination of each piece, checking functioning of camera shutter, examining for damaged or worn parts and repairing or replacing them in accordance with service manuals.

2117-276 GEOPHYSICAL TECHNICIAN(prof. & tech., n.e.c.)
 DPT:362
 GED: 4 SVP: 6 EC: B PA: L 4 5 6 7

Carries out a limited number of technical functions in geophysics and petroleum geology, primarily in relation to installation, operation, maintenance and repair: Performs duties as described under master title, 01-210 PHYSICAL SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Directs positioning of instrument truck containing portable seismographic equipment such as, seismometers, amplifiers and recording oscillographs at predetermined location. Verifies distribution of seismometers over area adjacent to previously drilled blasting holes. Directs laying-out and connecting of electrical cables between seismometers and recording truck. Sets-up telephone or short-wave-radio communication systems between recording truck and shooting units. Operates audio-and-video-reproduction equipment to process seismic-wave field recordings for analysis by other personnel. Places recordings on reproduction equipment and moves controls to align recordings against time-base markings. Advances or retards position of waveforms as seen on oscilloscope or other indicator by adjusting controls and reproduces corrected recordings on photographic film for subsequent analysis. Develops negatives of photographically recorded sound waves, and prints photographic charts in portable darkroom. Repairs defective equipment, using instrument maker's hand tools and other diagrams and equipment. May be concerned with a particular aspect of geophysics or petroleum geology and be designated accordingly; for example, Observer, Seismic Prospecting Section-Plotter Operator(oil & nat. gas)

2117-299 OTHER PHYSICAL SCIENCES TECHNICIANS

This group includes technicians, not elsewhere classified, who perform technical functions, as described under master title, 01-210 PHYSICAL SCIENCES TECHNICIAN (prof. & tech., n.e.c.) in a variety of activities related to physical science for example; those who assist in the installation, operation, maintenance and repair of equipment associated with physical metallurgical research. A typical example of an occupational title covered by this residual group definition is, Physical-Metallurgical Technician(prof. & tech., n.e.c.)

2119-OCCUPATIONS IN PHYSICAL SCIENCES, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with research in the physical sciences, and with other physical-science related activities; such as, examining and testing firearms; exploring regions to discover mineral deposits; examining and analyzing written documents; and helping to prepare rock and fossil specimens for laboratory examinations. Metallurgists, other than physical

metallurgists, are classified in Unit Group 2151, METALLURGICAL ENGINEERS.

2119-110 METALLURGIST, PHYSICAL(prof. & tech., n.e.c.)
 DPT:031
 GED: 6 SVP: 8 EC: I 3 6 7 PA: L 4 7

Conducts research to investigate properties of metals, develop alloys, and advises on uses and methods of production: Observes, measures and records data related to experiments on metals or metal combinations that will perform under extremes of temperature and effects of friction and corrosion, using a variety of testing and measuring equipment. Conducts microscopic, X-ray, X-ray diffraction and spectrographic studies of metals and alloys to determine physical characteristics, such as crystalline structure, dispersion of alloy particles through basic metal, presence of impurities, fractures and other defects. Evaluates variables which influence physical and thermoelectric properties of exotic or unusual metals, such as beryllium, zirconium, columbium and molybdenum. Studies effect of radiation on metals exposed to space environment and nuclear reactors; the joining of diverse materials to form complex structures and the application of metals to optics, vacuum tubes, cryogenics and other systems. Conducts experiments in powder metallurgy and the process of compressing metallic powders and sintering them at high temperatures. Evaluates properties of metals during processes, such as rolling, extruding, casting, forming, welding, corrosion protection, alloying, heat and mechanical treatments to obtain optimum results at minimum costs. Determines type of metal to be used from a design and fabrication standpoint, taking into consideration magnetic and electronic properties, such as strength, weight, temperature resistance and rigidity. Advises on shortcomings of metals in use, and anticipated use. Tests alloys in tension, compression, impact bending and fatigue devices, to study their engineering properties and ensure compliance with prescribed standards. Develops hot-working and cooling processes to obtain desired characteristics, such as hardness, grain size, heat resistance and strength. Gathers documents and other technical information through searches of publications, attendance at technical society meetings and visits to other departments or plants. Consults with engineers and company officials, to develop methods of manufacturing alloys at minimum cost, minimize air pollution, and develop and implement inspection and testing procedures. Supervises and co-ordinates the work of technologists and technicians, and trains mill testers and inspectors in the performance of their duties. May specialize in a particular area of physical metallurgy and be designated accordingly; for example, Metallographer Research Metallurgist

2119-114 FIREARMS EXAMINER(gov. serv.) DPT:261
 GED: 4 SVP: 7 EC: I 6 PA: L 4 5 7

Examines and tests firearms, bullets and cartridge cases, to determine if exhibit bullet and cartridge were fired from a specific firearm: Sorts, marks, labels and records exhibits received for identification and record purposes, following established procedures. Examines, manipulates and operates firearm to determine make, model, manufacturer's name and mechanical condition. Fires test bullets into test equipment and retrieves, examines and compares bullets and cartridge cases with exhibits to determine if they came from the same weapon, using microscope. Examines and compares tools and tool marks and takes comparative photographs. Examines effaced stampings on metal objects, cleans and polishes damaged area, to restore serial numbers using electro-acid etching techniques. Keeps record of all tests performed on exhibits and conclusions reached, for information of investigating police, and for presentation of conclusions to court. Prepares and presents lectures to police personnel on firearms, and the collection and preservation of evidence.

2119-118 PROSPECTOR(mining and quarrying) DPT:281
 GED: 4 SVP: 7 EC: O 6 PA: H 3 4 6 7

Explores likely regions to discover mineral deposits, using topographical maps, surveys and reports, and utilizing a knowledge of geology and mineralogy: Examines outcrops, floats and stream channels for mineral content. Drills, dynamites or digs trenches or pits along rock formations or creek beds to obtain rock samples. Breaks off samples and tests them for presence of minerals with heat, acid, magnifying glass, or by pulverizing, washing or panning. Assays samples for preliminary quantitative estimates, visually or with geiger counter. Collects data on

rock formations, using geophysical instruments and devices, such as geiger counters, scintillometers and electronic sounding equipment. Draws maps to record data and determines feasibility of staking and developing claim. Stakes claim in accordance with provincial and federal legal requirements.

May develop mineral deposits by means of placer and hard-rock mining. May sell interests in discovered area.

2119-122 DOCUMENT EXAMINER(gov. serv.) DPT:281
GED: 4 SVP: 6 EC: 1 PA: S 4 7

Examines and analyzes handprinted, handwritten, typewritten or stamped documents, to determine authenticity of document, discover its author and decipher obliterated writings, impressions and markings:

Checks list of exhibits to ensure each item is received and marks them for identification and continuity of possession, in accordance with established procedure. Examines handwritten documents to identify or eliminate known writing with that being questioned, determine probable source, individual characteristics, degree of disguise and method of execution, using magnifying glass, microscope and light filters. Examines typewriters, cheque writers and typewritten documents, comparing type characteristics with impressions made to

determine make and model of equipment used. Treats stamped impressions, carbon paper, torn, aged, charred, blood stained, chemically or otherwise damaged documents, to preserve exhibit, restore text and enable decipherment, using microscopic and infra-red photographic techniques, muffle furnace (controlled heat) and stabilizing chemicals. Compares pens, pencils, inks, crayons and ink impressions with standards to identify type of writing instrument utilized with questioned handwritten detail, using ultraviolet and infra-red light filters, microscope and other test equipment. Prepares notes, sketches, photographs and illustrations, describing methods used, results obtained and conclusions reached. Attends court to present conclusions and uses displays to defend reasons for arriving at these conclusions.

2119-126 PALEONTOLOGICAL-LABORATORY HELPER(prof. & tech., n.e.c.) DPT:384
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Helps prepare rock or fossil specimens for laboratory examination: Records receipt of rock samples, cores and cuttings from oil and gas wells or boreholes. Washes or pulverizes specimens to remove extraneous matter. Classifies, sacks and labels samples. Mounts samples for microscopic examination. See also definition for term title, 02-160 HELPER (any ind.).

213-OCCUPATIONS IN LIFE SCIENCES

This minor group includes occupations concerned with research to increase the basic knowledge of all living organisms and the practical application of this knowledge in such fields as biology, zoology, bacteriology, pharmacology and agricultural science. Occupations concerned with providing technical support in life sciences research are included. These occupations are classified in the following unit groups:

2131 Agriculturists and Related Scientists

2133 Biologists and Related Scientists

2135 Life Sciences Technologists and Technicians

2139 Occupations in Life Sciences, n.e.c.

2131-AGRICULTURISTS AND RELATED SCIENTISTS

This unit group includes occupations concerned with conducting research into the growth, genetics and viability of plants and animals, and the nature and composition of soils, to extend the knowledge of the science of agriculture and horticulture, and apply this knowledge to the development, propagation and conservation of plants and animals. Typical specializations include studying the location, characteristics and composition of soils; supervising controlled-breeding experiments on plants and animals to ensure higher quality and yield; developing new methods and techniques for the processing and storing of agricultural products; and advising on operation and economics of farms.

2131-110 AGRICULTURAL SCIENTIST(prof. & tech., n.e.c.) DPT:031
agriculturist; agrologist.
GED: 6 SVP: 8 EC: B PA: S 5 6 7

Conducts research and experimentation in soil composition and use, live-stock and vegetable farming techniques, farm management and agricultural economics, and applies them to the practise of agriculture: Analyzes and classifies soils to determine composition, arability and additional nutrients required for a particular crop. Studies the feasibility of crop or livestock farming in a particular area, by conducting surveys to ascertain availability of markets, potential market prices and other economic variables. Develops new methods of harvesting, processing and transporting fruits and vegetables to minimize waste and spoilage. Teaches, demonstrates and develops new methods of cultivation, fertilization, production and conservation

of range and farm lands. Identifies vegetable and animal pests, and suggests methods of control. Investigates milk production to maintain a standard of quality of dairy products, and protection systems to ensure proper care of cattle and equipment. Studies current techniques of raising animals, poultry and bees, to implement or advise on new developments in animal husbandry. Supervises and co-ordinates the work of technologists and technicians. May evaluate agricultural land for tax purposes.

2131-114 ANIMAL SCIENTIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B PA: S 5 6 7

Conducts research in animal genetics, advanced animal husbandry methods and related matters, and applies knowledge in selection, breeding, feeding, management and marketing of dairy, beef and dual-purpose cattle, horses, poultry, sheep, hogs and goats:

Conducts experiments in controlled breeding to produce improved strains of off-spring, with desired characteristics of fertility, rate and efficiency of growth and greater resistance to disease. Conducts experiments to determine feed requirements of animals and nutritive value of feed materials. Investigates effects of different types of feed and new environmental conditions on the productivity and health of animals, as related to quality and quantity of the food value and fibre produced. Advises on improved methods or developments in housing and sanitation, animal parasite and disease control, meat slaughtering, product preparation and storage. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a specific type of animal, or a particular aspect of animal science and be designated accordingly; for example,

Animal Geneticist
Animal Nutritionist
Poultry Scientist

2131-118 FOOD SCIENTIST(prof. & tech., n.e.c.) DPT:031 GED: 6 SVP: 8 EC: I PA: L 4 5 6 7

Conducts research into development, processing, preservation, and distribution of new or existing food products:

Analyzes food for its chemical constituents by determining such factors as vitamin, protein, fatty acid and cholesterol content. Studies effects of condensation, dehydration, sterilization, pasteurization, homogenization, emulsification and freezing as applied to processing of food products especially on flavour, colour, texture and nutritive value. Develops new methods for cultivating, preserving, controlling or eliminating micro-organisms which have a direct bearing on problems of food preservation, spoilage, and fermentation. Supervises operation of test kitchens and pilot plants to determine best method of preparation by consumer and the most economical method of production. Advises on modifications to existing equipment to produce the new product. Develops food quality-control methods for use in production runs. Supervises test packaging of products from pilot plant for sampling by consumers. Prepares, or supervises the preparation of, scientific papers dealing with subjects in food science. Supervises and co-ordinates the work of technologists.

May be concerned with a particular aspect of food science and be designated accordingly; for example,

Food Analyst
Food Engineer
Food-Research Scientist
Product-or Package-Research Officer
Quality-Control-Research Officer

2131-122 PLANT SCIENTIST(prof. & tech., n.e.c.) DPT:031 agronomist. GED: 6 SVP: 8 EC: B PA: S 5 6 7

Conducts experiments with wheat, corn, potatoes and other vegetable and field crops, soil suitability and new growing and breeding methods, to ensure higher yield, improved quality and increased production:

Conducts breeding studies at research stations, institutes or farms to develop and improve yield, quality, adaptation to specific soils, climatic conditions, resistance to diseases of grains, vegetables and other field crops. Studies crop production to determine most effective means of planting, cultivating and harvesting. Develops methods of control of noxious weeds, crop diseases and insect pests. Analyzes soil to determine composition and suitability for particular plants. Prepares advisory bulletins and disseminates educational information on crops, to growers. Acts as liaison officer between government experimental agencies, universities and contract growers with respect to technical developments in agriculture. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a specific aspect of agronomy and be designated accordingly; for example,
Crop-Research Scientist
Crop Scientist

2131-126 SOIL SCIENTIST(prof. & tech., n.e.c.) DPT:031 GED: 6 SVP: 8 EC: I PA: S 4 5 6

Investigates, studies and observes location, characteristics, behaviour and composition of soils in order to improve soil management, ensure soil conservation, classify soil types and increase soil productivity and fertility:

Studies composition of soil to determine microbial population, content of organic matter, fertility, and presence of nitrogen, oxygen and other elements. Studies physical characteristics and chemical properties of soils to determine capabilities and limitations of potential growth, water absorption capacity, degree of acidity and texture. Classifies soil management practices, and studies their effects on long-range productivity of soil. Conducts experiments on farms, at research stations or institutes to determine best soil types for specific plants. Investigates problems of strip cropping, contour ploughing and terracing and other soil conservation practices, to reduce soil and mineral erosion, and to retain sufficient water supplies for proper irrigation. Rebuilds deteriorated, over-acidic and barren soils by stabilizing runoff, and applying green manure crops, lime, nitrates, compost residue and other nutrients and fertilizers. Supervises and co-ordinates the work of technologists and technicians.

May advise rural residents on land use and soil management. May

examine problems of layering and drainage of soils used in foundations for roads, dams, buildings and other structures. May direct soil surveys to plot boundaries of deposits, on maps. May be concerned with a particular aspect of soil science and be designated accordingly; for example,

Agrogeologist
Soil Conservationist
Soil-Fertility Expert

2131-130 HORTICULTURIST(prof. & tech., n.e.c.) DPT:131 GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Conducts experiments and studies and observes the characteristics of fruits and flowers in order to develop and improve plant varieties, production methods and breeding techniques, determine the effects of environmental conditions on plant propagation and growth, and improve the quality and yield of the harvest:

Conducts studies to improve resistance to disease and insect pests, reduce soil erosion, determine adaptability to different soils and climates, and increase yield and quality of fruit and nut trees, flowers, shrubs, vegetables and other horticultural plants. Conducts experiments to achieve optimum viability, strength and growth, using enriched seed, fertilizers, plant hormones, and different planting, spraying, cultivation, rotation, drainage and irrigation methods. Applies such breeding techniques as bud and scion grafts and cross-pollination to develop new strains and to introduce to a particular plant, new variances of colour, size, taste, texture and other characteristics. Analyzes production problems, and develops disinfecting, refrigeration, cauterization, shipping tubes, strong boxes and other equipment and methods to reduce damage, spoilage and waste, and to increase storage life, transportation range and seasons of availability. Classifies plants according to their ornamental, medicinal, nutritional and other values. Supervises and co-ordinates the work of technologists and technicians.

May supervise landscape operations and provide technical advice regarding vegetative growth as it affects highway construction and maintenance. May be concerned with a particular plant, group of plants, process or technique, and be designated accordingly; for example,

Horticultural-Products Specialist
Horticultural Taxonomist
Olericulturist
Ornamental Horticulturist
Pomologist
Research Horticulturist, Breeding
Research Horticulturist, Production

2131-134 FIELD SERVICE MAN(prof. & tech., n.e.c.) DPT:231 GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Advises farmers on general care of animals and poultry, crops, nutrition, disease prevention and care:

Visits farms to inspect stock and discuss growth and production rates, diseases and feeding problems. Advises farmers on various problems connected with growing and cultivating a particular field crop. Selects, kills and performs post-mortems on diseased poultry to study disease and its effect. Takes samples of plant and farm grain, animal feed and forage for laboratory analysis. Recommends other methods to improve care of stock or increase fertility of crops. Advises and assists farmers in securing veterinary services. Supervises and co-ordinates the work of technologists and technicians. Supervises programs assigned by nutritionists to determine feed conversion and costs.

2133-BIOLOGISTS AND RELATED SCIENTISTS

This unit group includes occupations concerned with conducting basic and applied research into all forms of living organisms and vital processes, and their relationship to each other and to their environment; studying origin, development, growth, reproduction, structure, function, distribution and other life phenomena, of a single species or community of species. Occupations in this unit group supplement their own field of competence by applying principles, methods, and findings of other scientific disciplines, particularly chemistry, physics and mathematics. Typical specializations include

bacteriology, botany, zoology, pathology, pharmacology, physiology, biochemistry and biophysics.

Botanists and Zoologists 2133-110 through 2133-126

2133-110 AQUATIC BIOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into origin, relationship, development and functions of plants and animals that live in water:
Plans field and laboratory studies of origin, development and functions, structure, distribution, environment, inter-relationship and other aspects of plants and animals that live in water. Observes characteristics and behaviour of water plants and animals in their natural environment. Identifies, classifies and preserves specimens and prepares collections to assist in studies. Examines biological specimens in laboratory employing such techniques as microscopy and photography. Co-ordinates and evaluates data obtained and prepares, or supervises preparation of, reports and scientific papers. Supervises and co-ordinates the work of technologists and technicians.

May study plants and animals living in fresh or salt water and the environmental conditions affecting them and be designated accordingly; for example,

Limnologist
Marine Biologist

2133-114 BOTANIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into physiology, heredity, environment, distribution, structure and economic value of plants for application in agriculture, forestry, horticulture and medicine:

Studies effect on distribution and type of plant growth of environmental elements, such as rainfall, temperature, sunlight, soil, elevation and diseases. Grows plants under controlled conditions to determine best soil, climate and other environmental conditions. Selects, tests and crossbreeds plants to obtain optimum qualities and quantities of plants, for use as food, drugs, fibres and other purposes. Studies nature of chromosomes, cells and tissues of plants using special staining techniques, microscopes, and other scientific equipment. Dissects plants under microscope to identify and accurately classify flower, leaf or whole plant. Studies relationship of environmental conditions to storage life of fruit, plants and vegetables. Prepares reports and studies for use by other agricultural and biological scientists. Supervises and co-ordinates the work of technologists and technicians.

May explore little-known areas to search for, identify and classify new species of plants. May be concerned with one particular aspect of botanical science and be designated accordingly; for example,

Economic Botanist
Plant Ecologist
Plant Taxonomist

2133-118 ENTOMOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into the classification, life cycle and habits of insects and allied forms of life:

Identifies and classifies all species of insects and allied forms of life, such as spiders, grasshoppers, aphids, termites and worms. Conducts research into insect physiology to determine manner in which insect organisms function. Studies insect distribution and habitat and recommends methods to prevent importation and spread of injurious types. Develops means to encourage growth and spread of beneficial insects. Conducts experiments into cause and control of insect diseases. Investigates factors affecting yield of nectar and pollen on various plants utilized by insects as food. Devises methods to control or eliminate harmful insects by developing new or improved insecticides and biological methods, including the use of viruses, predators and parasites. Conducts field and laboratory tests of pesticides and evaluates their effect on different species of insects and on the same species under different conditions. Improves bee and insect strains, utilizing selective breeding by artificial insemination. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with specializations such as silk-worm and bee culture and be designated accordingly; for example,

Apiculturist
Sericulturist

2133-122 MYCOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research studies into physiology of edible, poisonous, saprophytic and parasitic fungi to discover those useful to medicine and industry:

Studies morphology, taxonomy, physiology, ecology and pathology of fungi by collecting spores from fungi, placed in sterile container under aseptic conditions, to prevent contamination by airborne moulds. Transfers spores, under aseptic conditions, to sterile medium, incubates spore cultures, and transfers them to sterile bottles to develop into full grown spawn. Studies effects of fungi on growth and yield of various crop plants. Applies findings to agriculture, medicine and industry for development of drugs, medicines, moulds, yeasts and other useful products. Supervises and co-ordinates the work of technologists and technicians.

2133-126 ZOOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into origin, physiology, classification, habits, diseases, ecology and distribution of all forms of animal life and life processes, to increase the body of scientific knowledge and to develop practical applications in such fields as agriculture and medicine:

Studies animals and fish in natural habitat, to discover the ways in which animals influence and are themselves influenced by their environment. Collects specimens for laboratory study and zoological collections. Interprets data concerning habits, such as growth, migration, food and natural enemies, and devises methods to control them. Dissects and examines specimens, under microscopes, and uses chemicals and various types of scientific equipment to carry out experiments and studies. Collects and preserves specimens or prepares microscopic slides for such purposes as identification and development of species, and study of disease. Studies marine life lacking a vertical column (backbone). Studies functions of animal organisms and their development from the egg or embryo. Prepares, or supervises preparation of, laboratory reports or scientific papers on a particular aspect of zoological science. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a particular species of animal or with a particular specialty and be designated accordingly; for example,

Animal Ecologist
Animal Taxonomist
Herpetologist
Ichthyologist
Invertebrate Zoologist
Mammalogist
Ornithologist

Bacteriologists and other Microbiologists 2133-146 through 2133-174

2133-146 BACTERIOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I PA: S 4 7

Conducts research into nature and characteristics of bacteria to increase scientific knowledge and develop medical, industrial, and other practical applications:

Identifies bacteria by microscopic examination of physiological, morphological and cultural characteristics. Observes action of bacteria upon living tissues of plants and animals, and on dead organic matter. Classifies bacteria and conducts research and laboratory experiments to study basic biochemical, physiological and genetic aspects of living systems. Isolates and makes cultures of significant bacteria in prescribed or standard inhibitory media, controlling such factors as moisture, aeration, temperature and nutrition. Performs chemical analyses of acids, alcohols, enzymes and other substances produced by bacteria on organic matter. Provides a service to other scientists and to physicians in the diagnosis, prophylaxis and therapeutics of infections in humans and animals. Prepares, or supervises the preparation of, scientific papers dealing with a particular aspect of bacteriology. Supervises and co-ordinates the work of technologists and technicians. May conduct experiments to detect presence of harmful or pathogenic bacteria in water, food or in the general environment of a community, to control possible sources of pollution or contagion. May conduct research into the nature and characteristics of bacteria causing diseases

in animals. May be concerned with a particular aspect of bacteriology and be designated accordingly; for example, Public-Health Bacteriologist(gov. serv.)
Veterinary Bacteriologist

2133-150 FISHERY BACTERIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into the nature and characteristics of bacteria found in fish and shellfish products and by-products and identifies those detrimental to public health:

Performs duties similar to those of 2133-110 BACTERIOLOGIST (prof. & tech., n.e.c.). Participates in establishment and field surveys and investigational work and provides processors with advisory and technological information in order to improve product quality, water quality and plant sanitation. Ascertains the effectiveness of chemicals and bacteria which are not toxic to fish. Modifies or adapts available procedures, plans the approach to assigned problems and prepares detailed progress and other reports. Studies ecology, physiology, morphology and pathogenicity of bacteria identified with the diseases of fish.

2133-154 FOOD BACTERIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into nature and characteristics of bacteria in the manufacture, spoilage, poisoning and deterioration of food products including dairy:

Performs duties similar to those of 2133-110 BACTERIOLOGIST (prof. & tech., n.e.c.). Isolates cultures and identifies bacteria causing decomposition of food products. Investigates viability and activities of bacteria in canned, frozen, pickled and preserved foodstuffs, and in conversion and refining processes of starch, sugar and other products. Observes effects of changing temperatures, and other conditions, on activities of bacteria. Prepares tables and reports concerning effect of bacteria on flavour, body-age and keeping- qualities of cheese and other dairy products. Determines how contamination occurs and investigates methods of preventing contamination, or inhibiting development of objectionable bacteria, including use of acids and other chemical preservatives. Studies metabolism of bacteria and biosynthesis of toxins and mode of action of toxins involved in food poisoning.

May be concerned with dairy bacteriology only and be designated accordingly,
Dairy Bacteriologist

2133-158 INDUSTRIAL BACTERIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into the nature and characteristics of beneficial or destructive bacteria in the manufacture of industrial products:

Performs duties similar to those of 2133-110 BACTERIOLOGIST (prof. & tech., n.e.c.). Investigates synthesis abilities of specific bacteria under a variety of experimental conditions to determine most efficient method for mass production of industrial substances dependent on action of bacteria, for their manufacture and processing, such as industrial and beverage alcohols, amino acids, glycerine, antibiotics, acetone and yeast. Conducts experiments to determine methods of inhibiting or removing, from the environment, harmful bacteria occurring in various fermentation processes, such as, leather tanning, retting of natural fibres and manufacture of alcohol. Performs research to discover best methods of using bacteria to reduce organic industrial waste to useful substances, such as alcohol, amino acid, glycerine, antibiotics, vitamins and protein. Tests various acids and other chemicals for their effectiveness in inhibiting growth of bacteria, causing deterioration in paper, wood, cloth, food and drugs and other materials of organic origin.

2133-162 MEDICAL BACTERIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into nature and characteristics of pathogenic bacteria to identify types and strains found in man and animals:

Performs duties similar to those of 2133-110 BACTERIOLOGIST (prof. & tech., n.e.c.). Makes laboratory cultures of pathogenic

bacteria in special or standard media, identifying strains, types and characteristics. Conducts examinations of bacteria, using microscope equipment, serological, immunological, animal inoculation and fluorescent antibody methods and techniques. Tests virulence of pathogenic bacteria by observing effects of inoculations on laboratory animals. Investigates efficacy of chemotherapeutic treatments, antibacterial and antitoxic serums, vaccines, disinfectants and antibodies in prevention, treatment and cure of diseases by tests on laboratory animals. Compares and combines laboratory findings with clinical data supplied by hospitals and medical practitioners with respect to human illnesses.

May be concerned with research and development of immunizing agents and serums and be designated accordingly; for example, Immunologist
Serologist

2133-166 MICROBIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I PA: S 4 7

Conducts research into nature and characteristics of viruses, algae, protozoa and other micro-organisms to increase scientific knowledge and develop industrial, medical and other practical applications:

Studies the form, structure, reproduction, physiology and metabolism of micro-organisms and the products of their chemical activity. Examines the distribution of micro-organisms in nature, their relation to other living things and their reaction to chemical and physical factors in the environment. Identifies micro-organisms by microscopic examination of their physiological, morphological and cultural characteristics. Observes action of micro-organisms upon living tissue of plants and animals and other micro-organisms. Analyzes substances such as acids, alcohols and enzymes produced by micro- organisms on organic matter. Studies the growth, development and nutritional requirements of micro-organisms in their natural surroundings, and in synthetic media, observing conditions favourable for their reproduction, dissociation or destruction. Prepares, or supervises the preparation of, scientific papers dealing with a particular aspect of microbiology. Supervises and co-ordinates the work of technologists and technicians.

2133-170 PHARMACEUTICAL BACTERIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I PA: S 4 7

Conducts research into nature and characteristics of pharmaceutical products that depend upon action of bacteria for their formation, to discover efficient methods for their manufacture:

Performs duties similar to those of 2133-110 BACTERIOLOGIST (prof. & tech., n.e.c.). Determines conditions favourable to maximum effect of specific bacteria in production of pharmaceutical products such as penicillin, streptomycin and vitamins to serve as a guide for large scale production. Prepares vaccines by making emulsion of cultured pathogenic bacteria with antisera or other inhibitory fluids. Adjusts emulsion to predetermined standards of concentration or dilution. Prepares serums and antisera by separation of serum from blood of immunized animals. Supervises and co-ordinates the work of technologists and technicians.

2133-174 SOIL BACTERIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into the nature and characteristics of bacteria in soil, on plant roots and in organic modifications of soil:

Performs duties similar to those of 2133-110 BACTERIOLOGIST (prof. & tech., n.e.c.). Isolates, cultivates and identifies specific bacteria, observing ammonia production, nitrogen fixation, stimulation of sulphur and carbon cycles and denitrification and other conditions developed by their action in soils. Investigates beneficial reaction on soil of various organic matter decomposed by action of bacteria, applying bio-assay and chemical tests to organic and inorganic compounds resulting from such decomposition. Prepares and tests bacterial inoculations to increase nitrogen-fixing properties of leguminous plants, evaluating the effectiveness of commercially prepared inoculations.

Pathologists, Pharmacologists and Physiologists

2133-194 through 2133-214

2133-194 ANATOMIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies morphology of humans and animals to increase scientific knowledge and to develop practical applications in medicine and biology:

Examines the organs and tissues of the body, using such tools as the knife for gross anatomy, microscope for histology and embryology and the electron microscope for examining ultrastructure. Investigates the function and chemical composition of organs and tissues. Carries out experiments and investigates such anatomical characteristics and reactions as ability to regenerate damaged or destroyed parts of the body and possibility of transplanting organs and tissue from one living body to another, or organs from a cadaver to a living body. Prepares, or supervises preparation of scientific reports based on observations and experiments. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with the features and phenomena exhibited in the formation and development of an embryo, or with the minute structure of tissue discernable with a microscope, and be designated accordingly; for example,

Embryologist
Histologist

2133-198 PATHOLOGIST, ANIMAL(prof. & tech., n.e.c.) DPT:031
veterinary pathologist.
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies nature, cause and development of diseases in animals and structural and functional changes resulting from them:

Performs duties similar to those of 2133-202 PATHOLOGIST, MEDICAL (prof. & tech., n.e.c.). Supervises and conducts tests, employing chemical, electronic, visual and other techniques to determine presence, nature and status of disease in animal populations, and probable source of contamination or infection. Recommends methods of prevention and treatment based on results of autopsies and microscopic examination of cells and fluids. Conducts studies of various vaccines and sera and outlines effective sanitation programs where animals are housed. Supervises and co-ordinates the activities of technologists and technicians employed in diagnostic laboratories and governmental, industrial and university establishments.

2133-202 PATHOLOGIST, MEDICAL(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies nature, cause and development of diseases in man and structural and functional changes caused by them:

Diagnoses, from body tissues, fluids, secretions and other specimens, presence and stage of disease, and possible source of infection, utilizing laboratory procedures. Prepares, or supervises preparation of, tissue-section from surgical and diagnostic cases and autopsies, using special stains as a means of identifying function, morphology and pathology of obscure or difficult-to-identify cells, tissues and connecting fibres. Examines tissues under microscope to determine nature, cause or progress of disease. Performs autopsies to determine nature and extent of disease, injury or other disorder, cause of death and effectiveness of treatment. Supervises and co-ordinates the work of technologists and technicians.

May act as a consultant to other scientists and medical practitioners. May direct activities of a pathology department in medical school, hospital clinic, medical examiner's office or research institute. May be concerned with a particular aspect of pathology and be designated accordingly; for example,

Clinical Pathologist
Forensic Pathologist
Haematological Pathologist
Histopathologist
Neuropathologist
Oral Pathologist
Surgical Pathologist

2133-206 PATHOLOGIST, PLANT(prof. & tech., n.e.c.) DPT:031
phytopathologist.
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into nature, cause and control of plant diseases and applies this research to develop plant varieties resistant to disease:

Conducts plant pathology research to investigate nature of disease resistance. Selects and tests chemicals for control of plant diseases. Studies effects of chemicals on plants such as fungi, nutrition and structure of pathogens and characteristics and classification of nematodes. Investigates way in which pathogens attack, enter and kill plants. Inoculates healthy plants with culture of suspected organism taken from diseased plants and studies effects to determine organism responsible for disease. Tests disease control measures under laboratory and field conditions for effectiveness, and investigates susceptibility of different varieties of plants to the spread of disease, under varying soil and climatic conditions. Develops methods and apparatus for securing soil samples containing nematodes, and for isolating, mounting and identifying specimens. Studies losses from deterioration of perishable products in transit or storage, and develops practices to prevent or minimize losses. Studies effects of injuries to plants as a result of air pollution. Supervises and co-ordinates the work of technologists and technicians.

May inspect flower and vegetable seeds and flowering bulbs for disease, infection or insect injury. May be concerned with a particular type of plant, infection or disease and be designated accordingly; for example,

Plant Nematologist
Research-Plant Pathologist.

2133-210 PHARMACOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies actions of, and relationships between drugs and other substances on living organisms, and develops drugs which are useful in prevention and treatment of disease:

Performs experiments, drug dosage studies, tests and analyses to determine the effects of drugs and chemicals on metabolism, cell growth and reproduction, digestion and other life processes. Collaborates with other medical and biological scientists in testing drugs and standardizing drug dosage for medicinal use utilizing results of animal tests and knowledge gained from clinical experience. Collaborates with industrial chemists and pharmacists in development of drugs and standardization of production methods and drug potency. Analyzes substances which may be taken into the body, including food additives, industrial contaminants and drugs to determine their effect on human and animal cells, tissues, organs and life processes. Supervises and co-ordinates the work of technologists and technicians.

May specialize in a particular branch of pharmacology such as effects of drugs on particular organs of the body and the development of drugs to treat particular diseases. May be concerned with detecting and identifying harmful and poisonous substances and be designated accordingly,
Toxicologist

2133-214 PHYSIOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research on cellular structures, organ-systems, or the whole organism of plants and animals including human beings:

Studies respiration, circulation, digestion, excretion, movement, reproduction, nervous activity, and other functions under normal and abnormal conditions. Performs experiments to determine effects of internal and external environmental factors of life processes and functions of organisms, using microscopes, spectrophotometers, isotopes, X-ray equipment and computers. Studies glands and their relationship to body functions. Prepares, or supervises preparation of, physiological studies for use by other scientists. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a specialized study of cells, organs and organ systems of plants or animals and be designated accordingly; for example,
Cellular Physiologist
Human Physiologist(medical)
Insect Physiologist
Plant Physiologist
Veterinary Physiologist

Other Biological Scientists
2133-234 through 2133-258

2133-234 BIOCHEMIST(prof. & tech., n.e.c.) DPT:031
chemist, biological.

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into the chemical reactions that take place in living organisms, to increase scientific knowledge and develop medical, industrial and other practical applications:

Performs experiments, tests and analyses to determine action of food, drugs, serums, hormones and other substances on tissues and vital processes of living organisms. Isolates, identifies and synthesizes hormones, vitamins, allergens, minerals and enzymes. Examines the formation of antibodies and conducts research into the chemistry of cells and blood corpuscles. Studies the chemistry of body processes such as breathing and digestion, and of living energy changes such as growth, aging and death. Develops new or improved methods for preservation of food and drink, and preparation of serums, vaccines and hormone, pituitary and thyroid extracts. Advises on most efficient method of water purification and sewage treatment processes. Designs experimental equipment, where appropriate, and determines experimental materials to be used. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with industrial processes in production of alcoholic beverages, carbonated drinks, powdered foods and pharmaceutical products and be designated accordingly; for example,
Chemist, Enzyme
Fermentologist
Medicinal Chemist

2133-238 BIOPHYSICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies the physical characteristics, principles and behaviour of macromolecules, living cells and organisms, using physical and chemical-physical concepts and methods, applies these principles to the remedy or control of biological processes and measures the interaction and effects of various forms of energy with living matter:

Studies the functions and physical mechanisms of seeing, hearing, tasting, feeling and smelling. Investigates mathematical models which describe cycles or control aspects at all levels of living tissue. Conducts research on mechanism of control by the nervous systems, including linear transmission of electrical impulses from the sensory organs to the brain, and from the brain to other organs and muscles. Studies the human brain in terms of the transfer, manipulation and storage of information, and applies this knowledge to the development of computers. Investigates the absorption and conversion of light energy, via chlorophyll or similar molecules, in the process of photosynthesis of plants, or retinene in the eye. Examines physical forces involved in molecular replication and the manner in which the characteristics of plants and animals are propagated to subsequent generations. Examines the structure and spatial conformation of proteins and determines the effects of radiation on them, using X-ray, electron microscopy and osmometry. Exposes molecules, cells and whole organisms to observe the radioactive decay of living matter. Traces circulatory system and heart action to observe physical flow properties of blood with respect to pressure, fluidity and friction, using fluid-flow meters and radioactive or chemical tracers. Applies results of research to develop laboratory and clinical equipment and techniques; such as, thermographs, X-ray treatments, isotope-scanning devices, plastic arteries and valves, artificial organs and limbs, heart-lung pump systems and respirators. Prepares, or supervises preparation of, scientific papers or articles on a particular aspect of biophysics. Supervises and co-ordinates the work of technologists and technicians. May be concerned with a particular specialty of biophysics and be designated accordingly; for example,

Mathematical Biophysicist
Medical Biophysicist
Medical-Engineering Biophysicist
Molecular Biophysicist
Physiological Biophysicist
Radiation Biophysicist

2133-242 CELL BIOLOGIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research into structure, function and development of animal, and plant bacterial cells and viruses of all types:

Studies both living and preserved cells and viruses, using bright-field, phase-contrast, fluorescent, electron and other types of microscopes. Prepares cells and tissues for microscopic study, using wax and plastic embedding, microtomes and other equipment. Stains specimens to visualize structure and indicate chemical composition. Records various stages of research revealed by microscopic examination by special cameras. Analyzes chemical composition of cells by micro-spectrophotometry and micro-fluorimetry. Prepares and studies autoradiographs of cells which have been supplied with radio-active isotopes. Breaks cells and prepares cell fractions, using differential and density gradient centrifugation. Analyzes purified-cell fractions by microscopy, electrophoresis, analytical centrifugation, radio-active counting procedures and chemical and enzymatic extraction. Designs and performs experiments using drugs and other agents which alter the normal situation in controlled ways to completely reveal all of the structures in cells and viruses at the microscopic, sub-microscopic level, and to elucidate the functions of structures in all situations. Supervises and co-ordinates the work of technologists and technicians.

May concentrate on cell molecules dealing with reproduction and gene functions. May study structure and processes in cytoplasm of cell concerned with metabolism and growth. May concentrate entirely on viruses which cause diseases in man and animals. May be concerned with a particular aspect of cell biology and be designated accordingly; for example,
Cellular Biochemist
Cytologist
Veterinary Virologist
Virologist

2133-246 CLINICAL CHEMIST(prof. & tech., n.e.c.) DPT:031
analytical biochemist
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Conducts research to develop methodology and procedures used in clinical biochemistry, and analyzes substances found in biological fluids:

Formulates analytical techniques, methodology and procedures based on observation and experimentation. Develops techniques for use of different types of instruments, such as automated chemical analyzers, gas chromatographs and spectrometers. Analyzes enzymes, hormones, products of carbohydrates, lipid and protein metabolism found in biological fluids, and conducts toxicological assays. Establishes normal values of spinal and other body fluids, using micro- and ultramicro-analytical techniques. Evaluates commercial diagnostic kits and laboratory instruments. Designs, inaugurates and conducts systems of data-processing and computerization for reporting of biochemical analyses. Supervises and co-ordinates the work of technologists and technicians. Establishes and supervises quality-control programs for clinical-chemistry laboratories and participates in related surveys. Prepares, or supervises preparation of, laboratory reports. May, on request, advise on biochemical methods to be used in diagnosis, and interpret results of tests.

2133-250 GENETICIST(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies the inheritance of resemblances and differences among organisms related by descent, and the biochemical and physiological means by which these are established and controlled:

Studies the origin, transmission and development of hereditary characteristics in organisms ranging from viruses and bacteria to the most advanced plants and animals. Determines genetic composition of organisms with respect to such characteristics as colour differences, size, crop yield, climatic adaptation or susceptibility to specific diseases. Analyzes the physical and chemical factors of genes which influence specific traits. Induces mutations or inheritable changes, to study the fundamental laws of heredity, or improve the quality of plants and animals of economic importance, using radiation, chemicals or other experimental agents. Analyzes genetic composition of populations and attempts to show how they may evolve through mutation and selection. Cross-breeds animals and plants within and between different strains to study the relationships between characteristics or to obtain new combinations of desirable

characteristics. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a particular aspect of genetics and be designated accordingly; for example,

Cytogeneticist
Developmental Geneticist
Molecular Geneticist
Population Geneticist

2133-254 MOLECULAR BIOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies the structure and function of animal, plant, bacteria or virus proteins and nucleic acids:

Conducts experiments on cellular regulation, on the mechanism and control of biosynthesis and the enzymic activity of proteins. Examines molecular architecture and function of cellular organelles. Studies gene structure and gene action. Prepares, or supervises preparation of, scientific papers or articles dealing with a particular aspect of molecular biology. Supervises and co-ordinates the work of technologists and technicians.

May be engaged in a specialized field of molecular biology and be designated accordingly; for example,

Development Biologist
Enzymologist
Molecular Physiologist

2133-258 PARASITOLOGIST(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: I 6 PA: S 4 7

Studies biology of protozoans, tapeworms, roundworms, mites, ticks and other zooparasites to gain an understanding of their relationship with their environment, the animal host:

Studies morphology, ultrastructure, systematic life cycles, development and biochemistry of parasites. Investigates the symptomology, pathology and immunology of parasites and their effects on humans, domestic animals and wildlife. Studies the epidemiology of parasitic diseases to determine methods of control, utilizing a knowledge of the biology of the animal and human hosts involved, in the cyclic pattern of their existence. Prepares, or supervises the preparation of, scientific papers or reports on parasitology. Supervises and co-ordinates the work of technologists and technicians.

May be concerned with a particular type of parasite in medicine, veterinary medicine or wildlife and be designated accordingly; for example,

Medical Parasitologist
Protozoologist
Veterinary Parasitologist
Wildlife Helminthologist

2135-LIFE SCIENCES TECHNOLOGISTS AND TECHNICIANS

This unit group includes occupations as described under master titles, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.) and 01-140 LIFE SCIENCES TECHNICIAN (prof. & tech., n.e.c.) concerned with carrying out technological and technical functions in a life sciences specialization, such as botany, zoology, forestry, horticulture or agriculture, using a knowledge of scientific and mathematical principles and laboratory practices. Physical sciences technologists and technicians are classified in Unit Group 2117, PHYSICAL SCIENCES TECHNOLOGISTS AND TECHNICIANS and engineering technologist and technicians are classified in Unit Group 2165, ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS. Life sciences technologists and technicians in the field of medicine and health are classified in Minor Group 315, OTHER OCCUPATIONS IN MEDICINE AND HEALTH.

Agricultural Technologists 2135-110

2135-110 AGRICULTURAL TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: B 6 PA: S 4 7

Carries out technological functions in various aspects of agricultural science, primarily in support of research and development, by performing any combination of the following duties:

Performs duties as described under master title, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Studies topographical, physical and soil characteristics of farmland, to determine most effective utilization and the nutrient deficiencies. Assists in developing new methods of planting, fertilizing, harvesting, processing and transporting crops to effect optimum land usage, improve productivity and minimize spoilage. Isolates, examines and identifies pathogenic micro-organisms and insects, parasites, fungi and weeds deleterious to crops and livestock, and assists in devising methods of control. Conducts milk analyses to maintain standards of quality. Draws blood from ven in wings of fowls, using needle, and examines blood for disease symptoms, or sends blood to laboratory for analysis. Artificially inseminates female turkeys by inserting syringe of semen into cloaca and depressing plunger. Inspects cattle and poultry and indicates modifications to feed formulas to improve quality of livestock and accelerate marketability. Aids in experiments of controlled breeding to improve strains with increased fertility, rate of growth and disease resistance. Analyzes and classifies soils to determine composition and crop suitability.

May be concerned with a particular aspect of agricultural technology and be designated accordingly; for example,

Field-Crop Technologist
Poultry Technologist

Biological Technologists 2135-130 through 2135-142

2135-130 BACTERIOLOGICAL TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: B PA: L 3 4 7

Carries out technological functions in bacteriology and microbiology, primarily in support of research and development, by performing any combination of the following duties:

Performs duties as described under master title, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Assists in isolation and identification of live bacteria and other micro-organisms by detailed study of their form, behaviour and by-products, using compound and electron-microscopes. Prepares specimens for study by smearing, dehydrating, staining and fixing micro-organisms on glass slides, using alcohol, dyes and heat. Grows cultures of significant micro-organisms under controlled conditions, such as environment, temperature and nutrition. Studies growth, development and nutritional requirements of bacteria, and observes their reaction to other micro-organisms, noting conditions promoting or inhibiting development, or causing death. Studies action of micro-organisms on plant or animal tissue in vivo or in vitro, and observes their beneficial, pathogenic or toxic effects. Analyzes acids, alkalies, alcohols, ethers, enzymes and other chemicals produced by bacterial action. Experiments with the use of bacteria in fermentation processes relating to food, industrial products and sanitation. Investigates activities of bacteria in canned, pickled and frozen foods, and notes effects on flavour, aging and keeping qualities of food products. Experiments with control of micro-organisms by radiation. Assists in bio-assays and chemical tests of organic and inorganic compounds produced by saprophytic bacteria and investigates reaction on soils. Devises and tests methods of propagating nitrogen-fixing bacteria in root complexes of leguminous plants.

May be concerned in a particular aspect of bacteriology and be designated accordingly; for example,

Fishery-Bacteriological Technologist
Food-Bacteriological Technologist
Industrial-Bacteriological Technologist
Soil-Bacteriological Technologist

2135-134 BIOLOGICAL TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: B 6 PA: L 3 4 7

Carries out technological functions in various aspects of biology in support of research, testing and analysis, by performing any combination of the following duties:

Performs duties as described under master title, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Reviews biological publications and papers to determine nature and results of previous research projects. Assembles, systematically classifies and maintains collections of terrestrial and aquatic flora and fauna. Tests, observes and records reactions of organisms to stimuli, for example, by growing plants under controlled-light conditions or subjecting dormant seeds or insect larvae to sub-zero temperatures. Assists in experiments on heredity by interbreeding and cross-breeding fruit flies and other rapidly-developing species and inducing mutation by irradiation. Collects and sterilizes male insects by enticing them into traps with the scent of females of the species, and irradiating them. Cultivates microflora and microfauna in vitro to develop and produce antibiotics or biological controls for animals or vegetable pests. Prepares specimens for microscopic examination by freezing, slicing and staining them and mounting them on slides, using dry ice, microtomes and chemicals. Sets up and uses complex equipment, such as electron microscopes and gas chromatographs. Labels plant-nutrients and insects with isotopes and traces their absorption or activities, using geiger counters or allied radiation counters. Assists in the testing and analysis of soils to determine factors influencing plant growth and controlling plant environment. Conducts field and laboratory studies of the distribution, morphology, physiology, life cycles and ecology of aquatic flora and fauna. May be concerned in a particular aspect of biology, and be designated accordingly; for example, Aquatic-Biology Technologist Ecological Technologist

2135-138 BOTANICAL TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: B 6 PA: L 3 4 7

Carries out technological functions in various aspects of botany, primarily in support of research and development, by performing any combination of the following duties:

Performs duties as described under master title, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Sets up experiments to study effects of environmental conditions on plant life by observing natural factors; such as, precipitation, soil composition, erosion, water table, sunlight, temperature, crown and root competition, and insect activities. Grows plants under controlled environmental conditions to determine beneficial or adverse factors. Develops improved plant strains by removing anthers, shielding flowers from insect pollination, and artificially fertilizing them with pollen from selected plants, using artists' brushes. Examines morphological characteristics of plants to assist taxonomic classification, using hand lens and microscope. Assist in experiments with fungi to determine the effects of saprophytes on materials and parasites on plants. Conducts experiments to determine effects of hormones and chemicals on plant species, to control disease, develop herbicides, fungicides, systematic pesticides, and to promote growth. Examines diseased plant tissue to identify pathogen and its modus vivendi. Inoculates healthy plants with pathogens from diseased plant to determine pathogenicity. Examines soils for presence of nematodes, and isolates, identifies and preserves them. Induces mutations in plants by irradiation or chemical agents to study genetic principles. Devises disease-immunizing techniques by experimenting with the grafting of buds and scions on disease-resistant stocks. Sets up and evaluates crop rotation experiments to improve yield and soil condition. Experiments with soil-enrichment by analyzing mineral and organic content, balancing pH, and adding chemical, biotic and organic material. Studies photosynthesis and growth regulators in plants. May be concerned in a particular aspect of botany and be designated accordingly; for example, Horticultural Technologist Mycological Technologist Plant-Pathology Technologist Soil-Science Technologist

2135-142 ZOOLOGICAL TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: B 6 PA: L 3 4 7

Carries out technological functions in various aspects of zoology, primarily in support of research and development, by performing any combination of the following duties:

Performs duties as described under master title, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Examines animal carcasses found in natural habitat to determine sex, age, cause

of death (predator, accident, disease or over-parasitism). Counts and measures dentition to ascertain age and state of dental health. Measures and weighs body. Removes certain parts of organs for laboratory study. Records data. Calculates population densities by sighting tracks, counting faeces and carcasses per square mile, and noting amounts of browsing. Examines faeces to discover diet of species. Assists in experiments in animal behaviour, migration patterns, and population dynamics by observing herds, packs, flocks, schools and other aggregations, in natural habitat, compounds, aviaries or pools. Studies hierarchic structure or pecking order and sexual activities. Captures, bands or tags mammals, birds and fish by snaring or tranquilizing, using darts and rifle. Obtains and records pertinent data and releases captive. Affixes telemetering and signal-emitting devices to birds, and animals, and tracks their range and such physiological activities as temperature and heartbeat, using electronic receivers. Studies ecology of aquatic fauna and interprets data collected in terms of life cycles, feeding patterns, predators, populations and mortality rates. Collects specimens for collections or laboratory study or for re-establishment of depleted areas. Records animal vocalization, bird songs and insect stridulations, using portable tape recorders and sound cones (field microphones). Studies insect morphology, physiology, life cycles, distribution and economic value. Photographs or draws wildlife for records or to illustrate project reports. Devises means of biological control to reduce populations of economic nuisances. Breeds, rears and releases insectivorous mammals and insect-predators and parasites in areas infested with insect pests of prey-and host-species.

May be concerned in a particular aspect of zoology and be designated accordingly; for example, Entomological Technologist Ichthyological Technologist Mammalogy Technologist Ornithological Technologist Wildlife Technologist

Other Life Science Technologists

2135-162 through 2135-199

2135-162 FISH-FARM TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231
sea-farm technologist.
GED: 5 SVP: 7 EC: B PA: L 3 4 7

Carries out a variety of complex technological functions in ichthyology in support of research and pisciculture:

Performs duties as described under master title, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Assists in analyzing water from fresh and salt water fish-rearing pools to determine salinity, pH and the presence of deleterious micro-organisms, using filters, titration tests and microscopes. Examines tissues, fluids and secretions from dead or live fish to determine causes of mortality or to detect presence and stages of disease or parasitism, and devises prophylaxis or therapy. Experiments with chemical and biological means of controlling predators, parasites and micro-organisms. Interprets and prepares fish-food formulas to promote optimum growth rate and high-quality flesh. Conducts research with various species of edible fish, molluscs and crustaceans to determine suitability for controlled rearing. Supervises technicians and tradesmen in care and maintenance of pools, tanks and equipment.

2135-166 FOOD TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: I PA: L 4 7

Performs a variety of technological functions, primarily in support of research, development, testing, analysis and processing activities in food science:

Performs duties as described under master title, 01-150 LIFE SCIENCES TECHNOLOGIST (prof. & tech., n.e.c.). Checks processing-line operating conditions at various stages by conducting mechanical, chemical and microbiological testing. Ensures that processing procedures, such as canning or bottling, meet specifications. Performs chemical tests to determine components; such as, sugar, starch, protein, fat, mineral and vitamin content. Conducts microbiological tests on yeasts, moulds and bacteria to ensure safety and shelf-life of products. Conducts quality-control tests. Supervises operation of test kitchens and pilot plants during development stages of new products.

May investigate sources of materials to be used in processing. May be

concerned with a particular aspect of food technology and be designated accordingly; for example,
Food-Process Technologist
Food-Product Technologist
Pilot-Plant Technologist, Food Products
Quality-Control Technologist, Food Processing

2135-199 OTHER LIFE SCIENCES TECHNOLOGISTS

This group includes life sciences technologists, not elsewhere classified; for example, those who carry out a variety of technological functions in a life science, and those who assist in forest-research and development. A typical example of an occupational title covered by this residual group definition is:
Forest Technologist(prof. & tech., n.e.c.).

Agricultural Technicians

2135-220

2135-220 AGRICULTURAL TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: B 6 PA: M 4 7

Carries out technical functions in various aspects of agricultural science, primarily in support of testing and analysis, by performing any combination of the following duties:
Performs duties as described under master title, 01-140 LIFE SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Examines bovine semen to determine gamete motility and to isolate and identify pathogenic organisms, using microscope. Ascertains semen density, using densimeter. Extends and preserves semen by adding diluents and antibiotics, labels it with identifying data and stores it in fast-freezing agent. Assists in livestock feeding experiments. Studies individual animal's or bird's data charts to learn physical characteristics and recommended diet. Prepares feed by weighing and mixing specified quantities of ingredients, and places fixed amounts of prepared feed in each trough. Observes livestock at regulated intervals to note changes in physical condition, revealed by appetite, lustre of coat or plumage, level of activity, weight variation, and egg or milk production and quality, and records individual's response to diet. Administers medication to experimental livestock, observes and records physical condition, and collects excreta for analysis. Prepares sample plots for planting, by analyzing soil and adding mineral and organic nutrients. Plants seeds and tends seedling; records growth-rate and yield, and selects superior plants for breeding. Selectively fertilizes plants by covering inflorescence with paper bags to prevent insect pollination, and transfers pollen from anthers to stigmata, using artists' brushes.
May assist in artificially inseminating hen turkeys by inserting syringe of semen in cloaca and depressing plunger. May be concerned with a particular aspect of agricultural science and be designated accordingly; for example,
Field-Crop Technician
Poultry Technician

Biological Technicians

2135-240 through 2135-272

2135-240 BACTERIOLOGICAL TECHNICIAN(prof. & tech., n.e.c.) DPT:361
microbiological technician.
GED: 4 SVP: 6 EC: I 6 7 PA: L 4 7

Carries out technical functions in various aspects of bacteriology, primarily in support of testing and analysis, by performing any combination of the following duties:
Performs duties as described under master title, 01-140 LIFE SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Sets up laboratory equipment; such as, centrifuges, microscopes, stills and glassware in support of specific experiments and tests. Grows micro-organism colonies in vitro on substrates, such as gelatin and agar or in broths enriched with glucose, blood-serum or other nutrients. Cultures viruses in living cells, such as chorio-allantoic membranes of developing eggs or in minced tissue. Selects single colonies of micro-organisms for sub-culture to obtain pure cultures of certain organisms. Aids in analyses of bacterial by-products to detect presence or absence of compounds; such as carbon dioxide, urea, ammonia, lead acetate and hydrogen

sulphide. Prepares specimens of diseased animal and plant tissue for microscopic study by chilling, sectioning, staining, and mounting them on glass slides, using microtomes, alcohol, dyes and gums. Assists in soil analyses by preparing soil solutions and mixtures for titration and other tests. Records flavour and quality changes in preserved food caused by bacterial action. Conducts experiments with micro-organisms in industrial fermentation and decomposing processes, such as retting of flax and other natural fibres, malt manufacture and the reduction of organic wastes to useful by-products.
May be concerned with a particular aspect of bacteriology and be designated accordingly; for example,
Fishery-Bacteriological Technician
Food-Bacteriological Technician
Industrial-Bacteriological Technician
Soil-Bacteriological Technician

2135-244 BIOLOGICAL TECHNICIAN(prof. & tech., n.e.c.) DPT:361

GED: 4 SVP: 6 EC: B 6 PA: M 4 7

Carries out technical functions in various aspects of biology, primarily in support of testing and analysis, by performing any combination of the following duties:
Performs duties as described under master title, 01-140 LIFE SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Conducts pH and titration tests on soil samples. Prepares specimens of terrestrial and aquatic plant, animal, fish and insect tissues or organs by dissecting them, using knives or microtomes, fixing, and staining them with chemicals and dyes, and mounting them on glass slides. Grows cultures of micro-organisms in vitro on colloid substrates. Sets up laboratory apparatus, such as centrifuges, stills and autoclaves. Records observations during field studies, experiments and tests, and writes reports.
May be concerned with a particular aspect of biology and be designated accordingly; for example,
Aquatic-Biology Technician
Ecological Technician
Vaccine Technician

2135-248 BOTANICAL TECHNICIAN(prof. & tech., n.e.c.) DPT:361

GED: 4 SVP: 6 EC: B 6 PA: L 4 7

Carries out technical functions in various aspects of botany, primarily in support of botanical testing and analysis, by performing any combination of the following duties:
Performs duties as described under master title, 01-140 LIFE SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Tests seed for germination, purity and weed content. Tends plants being grown in controlled environments; marks, and records growth. Prevents random pollination of plants, by carefully removing anthers or staminate flowers, and covering stigmata or pistillate flowers, using scissors, tweezers and paper or plastic bags. Cross-pollinates plants by transferring pollen from anthers of selected individuals to stigmata of others, using artists' brushes. Cultures fungi under sterile conditions to obtain spores from desirable species or strains. Inoculates or paints plants with hormones or chemicals to determine effects on growth, disease, fungi, parasites or insects. Removes diseased tissue from plants and examines it to identify disease and its cause, using microscope. Collects, dries and presses plants, and systematically identifies and catalogues them for herbarium specimens, using hand lens and microscope. Analyzes soil, using chemicals, chromatography and spectrography. Aids in genetic experiments to transfer morphological and physiological changes in offspring by inducing mutations in parent plants, using radiation and chemicals. Experiments with immunizing techniques of grafting susceptible species on to disease-resistant stocks. Conducts experiments in crop rotation, to improve yield and soil conditions. Inoculates plants with viruses to break down pigmentation and produce varied coloration.
May be concerned in a particular aspect of botany and be designated accordingly; for example,
Horticultural Technician
Mycological Technician
Plant-Pathology Technician
Soil-Science Technician

2135-252 ZOOLOGICAL TECHNICIAN(prof. & tech., n.e.c.)
DPT:361

GED: 4 SVP: 6 EC: 1 PA: L 4 7

Prepares, preserves and catalogues all types of zoological specimens; such as, fish, mammals, reptiles, birds and zooplankton and assists scientists in museums and other institutions:

Performs duties as described under master title, 01-140 LIFE SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Receives and processes specimens as they are collected by field workers by defleshing fresh specimens, shipping skins to tannery, cleaning and preparing skeletal material. Periodically fumigates collections, using various types of fumigants. Catalogues collections by arranging specimens in proper taxonomic and geographic order. Records each collection locality on distribution maps and prepares necessary labels. Assists in research projects by measuring and recording skeletal dimensions, photographing specimens and performing studies and tests on live animals; such as, taking smears, making and staining microscopic slides and performing chromosome counts. Analyzes results under compound microscope. Extracts information, such as sight records, and ecological and behavioural information from field notebooks. Requisitions equipment and supplies and keeps records of their use. Prepares specimens for shipment and receives specimens on loan from other institutions. Maintains files and data pertaining to such loans.

May make field trips to study and collect specimens and assist in the planning of logistics for research field parties including travel, accommodation, meals, equipment and supplies. May specialize in one particular field of zoology and be designated accordingly; for example,

Entomological Technician
Ichthyological Technician
Mammalogy Technician
Ornithological Technician
Wildlife Technician

Other Life Science Technicians

2135-272

2135-272 FOREST TECHNICIAN(prof. & tech., n.e.c.)
DPT:361

GED: 4 SVP: 6 EC: B 6 7 PA: M 3 4 7

Carries out a limited number of technical functions in forest science in support of scientists and foresters engaged in forest- research, -management, or -conservation:

Performs duties as described under master title, 01-140 LIFE SCIENCES TECHNICIAN (prof. & tech., n.e.c.). Surveys, measures, stakes and maps forest areas and access roads, using compass and surveying instruments. Conducts forest inventories by counting and measuring trees, and listing their species, and estimates timber content, using calipers and rangefinder. Prepares and lays out cutting plans, and traces and fixes boundaries. Inspects, and assesses extent of insect and disease damage. Tends, thins and transplants seedlings. Inspects logging operations for compliance with regulations. Conducts pollen counts, collects samples of plants, seeds, foliage, bark and roots, and examines them for evidence of insects and diseases. Assists in laboratory and field experiments conducted with plants, animals, soils, and controlled light and climatic conditions to support research programs. Carries out field experiments by preparing and tending sample plots of specific plant species, and recording growth factors and other characteristics.

May patrol forest areas and record dryness ratings, and state of forest floor.

2139-OCCUPATIONS IN LIFE SCIENCES, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with research in the life sciences; and with other life- science activities; such as, studying, developing and controlling forest lands and resources; and conducting displays and lectures on historical, natural, and scientific features of public parks.

2139-110 FORESTER(prof. & tech., n.e.c.)
DPT:031

GED: 6 SVP: 8 EC: B PA: L 5 6 7

Studies, develops and controls forest lands and resources lands and resources for economic, recreational and ecological purposes, and for the preservation and controlled exploitation of forest products:

Observes the effects of environmental factors, such as light, precipitation and soil composition on the growth, health and foliage of forest plants. Conducts research to study problems of forest propagation, and to observe the effects of thinning on forest yield. Investigates the adaptability of various species of trees by grafting, cross-pollinating and transplanting and exposing to various soil, climatic conditions, feed supplements and other factors. Determines causes of retarded forest growth, such as poor seed viability, fire and animal grazing. Prepares plans for reforestation, and devises methods to harvest timber with minimal waste and damage. Plans and implements projects for controlling floods, soil erosion, insect pests and tree diseases. Advises officials of government and industry, and the general public, on forestry problems, and conducts educational programs on care of forests. Supervises and co-ordinates the work of technologists and technicians.

May direct or participate in the mapping and surveying of forest areas. May be concerned with a particular aspect of forestry and be designated accordingly; for example,

Forest Ecologist
Research Forester
Silviculturist

2139-114 INTERPRETIVE NATURALIST(gov. serv.)
DPT:118

park naturalist.

GED: 5 SVP: 8 EC: B PA: L 2 4 5 6

Plans and co-ordinates exhibits and audio-visual displays, and gives lectures to inform public of park policies, historical, natural and scientific features according to location and environment of parks:

Confers with park staff to determine subjects to be presented and program schedule. Participates in park survey of forest conditions and distribution, abundance and habits of flora and fauna. Interviews specialist in desired fields to obtain and develop data for programs. Takes photographs, including motion pictures to illustrate lectures and publications and to develop displays. Plans and develops audio- visual devices, prepares and presents illustrated lectures, constructs visitor-centre displays, and conducts field trips to point out scientific, historic and natural resource features of park. Plans, organizes and directs activities of personal staff members. Maintains official photographic and information files for department.

214/215-ARCHITECTS AND ENGINEERS

This minor group includes architectural and engineering occupations concerned with designing and supervising the construction of buildings and other structures, and designing and supervising landscaping; conducting research, advising on, planning, designing, developing, and supervising the manufacturing, testing, installing, operating or maintaining of machines, instruments, facilities, processes and services. These occupations are classified in the following unit groups:

- 2141** Architects
- 2142** Chemical Engineers
- 2143** Civil Engineers
- 2144** Electrical Engineers

- 2145 Industrial Engineers
- 2147 Mechanical Engineers
- 2151 Metallurgical Engineers
- 2153 Mining Engineers
- 2154 Petroleum Engineers
- 2155 Aerospace Engineers
- 2157 Nuclear Engineers
- 2159 Architects and Engineers, n.e.c.

2141-ARCHITECTS

This unit group includes occupations concerned with design and construction of buildings and related structures and the aesthetic landscaping for parks, road development and other projects.

2141-110 ARCHITECT(prof. & tech., n.e.c.) **DPT:011**
GED: 6 SVP: 8 EC: B PA: S 4 7

Designs buildings, develops plans, specifications and detailed drawings, arranges contracts and exercises general supervision over construction:

Consults with client to determine type, style and size of building. Provides information regarding design, materials, costs and estimated building time. Plans layout, interior walls and location of equipment in project. Prepares sketches and documents of proposed project for client. Prepares or supervises the preparation of scale drawings, integrating structural, mechanical and aesthetic elements in unified design. Writes specifications and other contract documents for use by building contractors and craftsmen. Consults with engineers for specialized advice on soil, structural, electrical, mechanical and other technical problems. Confers with other consultants to develop feasibility studies, financial analyses and arrangements, site location and land assembly. Exercises general supervision over, and inspects construction work to ensure buildings are erected according to specifications.

May act as a consultant and advise clients for a fee, or specialize in design and layout of industrial, commercial, residential, recreational and institutional buildings and be designated accordingly; for example,

Architect, Industrial and Commercial Buildings
Architect, Residential Buildings
Architect, School
Consulting Architect

2141-114 LANDSCAPE ARCHITECT(prof. & tech., n.e.c.) **DPT:011**
GED: 6 SVP: 8 EC: B PA: S 4 7

Plans and designs aesthetic lay-outs for optimum usage of land areas; such as, parks, airports, industrial, commercial and residential subdivisions:

Confers with clients, economists, engineers and other architects on overall proposal. Compiles and analyzes site data, directing particular attention to geographic location, ecology of area, vegetation, soil, rock features, drainage and location of structures. Prepares site plans, working drawings, specifications and cost estimates for land development, showing ground contours, vegetation to be planted, location of structures, and facilities such as roads, walks, fences, parking areas, walls and utilities. Inspects construction work in progress to ensure compliance with landscape specifications. Approves quality of materials and work and advises clients, engineers and contractors on landscape problems.

2142-CHEMICAL ENGINEERS

This unit group includes occupations concerned with research and design, and development of manufacturing

processes in which chemical changes occur; and supervision of the construction, operation and maintenance of chemical plant equipment. Typical specializations include: oil and metals refining; explosives, medicinals and pharmaceuticals development; pulp and paper production and food processing.

2142-110 CHEMICAL ENGINEER, DESIGN AND DEVELOPMENT(prof. & tech., n.e.c.) **DPT:031**
GED: 6 SVP: 8 EC: I PA: S 4 5 6 7

Designs and prepares specifications for the erection and operation of chemical plants and control systems for the commercialization of new or improved products or processes:

Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Specializes in preparing designs for chemical processes, and plans lay-outs of control systems of processes such as those used to remove and separate components, effect chemical changes using electric current, test and evaluate fuels, transfer heat by conduction, convection or radiation, and control the moving, storing and packaging of solids, liquids and gases. Designs pilot plants and supervises their operation. Prepares analytical reports. Provides advice and information to sales personnel responsible for field evaluation of products or processes, or market research personnel responsible for estimating market volume and selling price. Consults with patent agents to ensure company interests are protected on new products or processes developed.

May be concerned with development and design of one particular product or process and be designated accordingly; for example,

Combustion Engineer
Design Engineer, Chemical-Products Process
Design Engineer, Explosive-Products Process
Design Engineer, Petroleum-Products Process

2142-114 CHEMICAL ENGINEER, RESEARCH(prof. & tech., n.e.c.) **DPT:031**
GED: 6 SVP: 8 EC: I PA: L 4 5 6 7

Conducts applied research to solve engineering problems concerned with development and improvement of new or existing chemical products or processes, on a commercial scale:

Conducts experiments and correlates data gained from work in areas; such as, chemical reaction, fluid flow, heat and mass transfer, distillation, drying, corrosion and properties of materials. Makes calculations; such as, heat transfer, specific heats and equilibrium constants. Decides on merits of batch versus continuous flow operation. Prepares process-flow diagrams and selects unit process equipment. Selects materials of construction to minimize corrosion and contamination. Estimates scale-up ratio of materials and decides whether a pilot plant step is necessary. Studies product utilization and pollution control problems. Collaborates with chemists and other research engineers. Supervises and co-ordinates the work of technologists, technicians and tradesmen. See also definition for term title, 02-310 RESEARCH ENGINEER (prof. & tech., n.e.c.).

May specialize in research in one particular product of process and be designated accordingly; for example,

Explosives Engineer (explosives)
Plastics Engineer (plastic prod.)
Polymerization Engineer (plastic prod.)

2142-118 CHEMICAL ENGINEER, PRODUCTION(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: L 4 5 6 7

Supervises industrial processing, fabrication, maintenance and repair operations to ensure production of scheduled amounts of products undergoing physical and chemical changes:

Interprets analysis and quality control reports received from research, design and development engineers and other technical workers. Determines most effective arrangement of equipment; such as, distillation, absorption, adsorption and evaporation towers, and mixing, blending and separating equipment. Controls processes using automatic devices and instrumentation. Ensures that correct materials and equipment are used and that they conform to specifications. Diagnoses malfunctions and institutes immediate remedial action to ensure efficient operation. Supervises technologists, technicians and tradesmen engaged in support activities.

May specialize in one particular phase of process or production operation and be designated accordingly; for example, Absorption and Adsorption Engineer

Electrochemical Engineer

Heat-Transfer Engineer

Mixing Engineer

Separation Engineer

Size-Reduction Engineer

2143-CIVIL ENGINEERS

This unit group includes occupations concerned with the planning, design, and/supervision of the construction, maintenance and repair of buildings, bridges, dams, tunnels, ports, docks and other structures, water supply and sewage system, transportation and other facilities for public, industrial or commercial use. Typical areas of specialization include: structural, hydraulic, environmental, irrigation and drainage, harbour, railway, highway, pipeline and tunnel engineering.

2143-110 MATERIALS AND TESTING ENGINEER(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: B PA: S 5 6

Conducts research, development tests and evaluation of quality or suitability of materials and products related to projects; such as, bridges, dams, roads, airports, railways, waste disposal and flood control and industrial and other large buildings:

Co-ordinates and directs research, development and testing of materials; such as, asphalt, concrete, steel, cement, timber and plastics, considering factors; such as, stresses and strains, estimated load, water pressures, wind resistance and temperature fluctuations. Advises contractors and others, on materials most suited to meet individual construction problems. See also definition for term title, 02-310 RESEARCH ENGINEER (prof. & tech., n.e.c.).

2143-114 STRUCTURAL-DESIGN ENGINEER(prof. & tech., n.e.c.) DPT:031
structural engineer.
GED: 6 SVP: 8 EC: I PA: L 4 5 6 7

Plans and designs the load-bearing framework for buildings, towers, bridges, tunnels and other structures:

Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Designs frameworks of buildings, towers, bridges, tunnels and other structures to ensure strength and rigidity considering factors; such as, tolerable stresses within given safety margins, vibration allowances, size, shape, appearance and economy. Studies developments of new materials and methods and their impact on design and construction. "

2143-118 CIVIL ENGINEER, GENERAL(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Studies design proposals and advises on works and facilities; such as, roads, railways, bridges, dams, disposal systems and buildings, and supervises their construction and maintenance by performing any combination of the following duties:

Studies project proposal, accumulates and analyses basic data; such as, topography and geology for highways, run-off history of a river, population growth statistics, laboratory analysis of cement, soil and water. Prepares preliminary plans for the project applying knowledge of mathematics and engineering design to superstructures, structural frames and infrastructure. Prepares estimate of project to ensure economy of cost in relation to service required. Supervises preparation of detail design drawings and specifications for contractors and consults with other specialists such as mechanical, chemical and electrical engineers and architects regarding technical and aesthetic requirements. Secures approval of plans from client, management and other authorities. Inspects project during construction and certifies, on completion, that it has been built in accordance with specifications. Supervises the maintenance and repair of civil engineering projects such as, transportation systems, water systems, pipelines or water-resource developments. Conducts studies into improving maintenance practices and the use of new materials to keep completed facilities in service. Supervises and co-ordinates the work of technologists, and technicians.

May work as a consultant or collaborate with engineers in other disciplines and advise clients for a fee.

2143-122 AIRPORT ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: B PA: L

Studies design proposals and advises on construction, maintenance and repair of airports, runways and other facilities:

Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in preparing designs for airports, hangars and control towers. Supervises construction, maintenance and repair of runways, taking into consideration factors; such as, weight, size and speed of aircraft. Advises contractors on technical problems during construction.

2143-126 BUILDINGS AND BRIDGE ENGINEER(prof. & tech., n.e.c.) DPT:131
construction engineer.
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Studies design proposals and prepares details of structures, such as buildings and bridges, and supervises their construction or erection:

Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in the erection, maintenance and repair of buildings and bridges for industrial, commercial or public use. Determines the equipment and men required to dig excavations and raise superstructures. Designs and supervises erection of temporary structures, scaffolding, formwork and materials processing plants.

May conduct load and performance capability tests.

2143-130 ENVIRONMENTAL ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: S

Studies design proposals and advises on the control of environmental conditions such as those associated with the gross pollution of air and water and the more subtle damage accruing to minds and bodies from poor engineering practices:

Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in preparing specifications for facilities; such as, screens, grids, grit chambers, sedimentation and sludge tanks, digestors, filters and other devices to control water and air pollution. Supervises preparation of designs for incinerators, water treatment and sewage disposal plants. Advises on control of excessive noise, smoke, radiation, and other pollutants. Recommends and supervises disposal procedures to control noise, obnoxious fumes, petroleum products, greases, human and industrial waste and chemicals resulting from poor engineering design, carelessness or ignorance.

May inspect environmental conditions of public places; such as,

markets, camps, factories and parks. May be concerned with a particular aspect of environmental engineering and be designated accordingly; for example,
Air-Pollution-Control Engineer
Industrial-Hygiene Engineer
Noise-Abatement Engineer
Sanitary Engineer
Sewage-Control Engineer
Water-Treatment Engineer

2143-134 HIGHWAY ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: B PA: L

Studies design proposals and advises on construction, operation and maintenance of highways, streets and roads:
Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in analyzing population and growth statistics and traffic patterns and volume to project future requirements. Consults with government officials and other specialists to design efficient and safe traffic systems. Studies roadway and embankment design, the geometry of highway interchanges and the maintenance of facilities, such as culverts and overpasses.

2143-138 IRRIGATION AND DRAINAGE ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: L 4 7

Studies design proposals and advises on construction, maintenance and repair of irrigation and drainage systems:
Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in determining, through tests and measurements, the characteristics of soil; such as, salinity, water table level, areas of sub-normal plant growth, type of soil and surface profile, and studies data. Computes and estimates rates of water flow. Supervises preparation of plans showing channels, conduits, mains, tiling and ditches. Supervises construction of laboratory models to study construction and flow problems. Determines need for securing easements and right-of-way deeds. May be concerned with one particular aspect of irrigation and drainage and be designated accordingly; for example,
Drainage-Design Engineer
Hydraulic Engineer
Irrigation Engineer

2143-142 PIPELINE ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Studies design proposals and advises on construction, maintenance and repair of pipelines for transmission of liquids, gases and solids in large quantities:
Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in preparing design proposals for pipelines and pipeline equipment, facilities and structures in consultation with petroleum and mechanical engineers. Determines suitable lay-out of lines based on accurate mapping and surveying. Analyzes operations and maintenance costs to determine efficiency and devise improvements or innovations in the systems. Provides technical advice in operation of machinery and equipment used to transport petroleum products through pipeline systems.

2143-146 RAILWAY ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: L

Studies design proposals and advises on construction, maintenance and repair of new or existing railway systems including tracks, terminals, yards and other facilities:
Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in studying natural features of proposed routes. Plans types of rail beds, rail size and curves to meet train speed and load requirements. Conducts traffic surveys to establish most suitable route for rapid transit or urban railway systems.

2143-150 SOIL ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: L 7

Conducts field and laboratory test of soils to determine their properties in relation to design, foundation and construction problems:
Inspects proposed construction sites to analyze and determine general type and characteristics of the soil. Conducts drilling and sampling programs to establish soil and foundation conditions at the construction site. Oversees and participates in field and laboratory testing of soils, and ensures that test equipment and machinery is properly set up. Reviews and prepares reports of test results and makes recommendations for the solution of engineering problems identified in test reports. Prepares specifications of soil mixtures for use in roads, embankments and other construction. Calculates and advises on required slope at cuttings and thickness of soil dams and retaining walls. Supervises and co-ordinates the work of technologists and technicians.
May work as a consultant and advise clients for a fee.

2143-154 WATER-RESOURCES ENGINEER(prof. & tech., n.e.c.) DPT:131
waterworks and water-supply engineer.
GED: 5 SVP: 8 EC: B PA: L 5 6

Supervises construction and advises on operation, maintenance and repair of water resource facilities; such as, dams, aqueducts, hydro-electric and pumping plants, and water-supply systems:
Performs duties similar to those of 2143-118 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in control and utilization of water resources involving the design and construction of reservoirs, dams, conduit systems, canals and storage bays. Evaluates plans and specifications for conformance to established water works standards. Initiates and directs studies, and advises on the economics of systems operation, water distribution and equipment performance to determine suitable solutions to operational and technical problems. May be concerned with one particular aspect of water resources engineering and be designated accordingly; for example,
Pumping and Supply Engineer
Purification Engineer
Water-Distribution Engineer

2143-199 OTHER CIVIL ENGINEERS

This group includes civil engineers, not elsewhere classified; for example, those who specialize in the dredging of harbours and ship channels, and co-ordinating, and directing surveying, photogrammetry and mapping. A typical example of an occupational title covered by this residual group definition is:
Chief-Photogrammetric Engineer(prof. & tech., n.e.c.)

2144-ELECTRICAL ENGINEERS

This unit group includes occupations concerned with the design, construction, maintenance and repair of systems which generate, transmit, distribute, control and utilize electric energy; research into electrical engineering problems and development of electrical and electronic products; and provision of technical direction in the manufacture of a wide variety of electrical and electronic equipment; such as, communications equipment for telephone, radio, television and satellite systems, automatic control systems and computers, domestic equipment and other labour saving devices. Typical areas of specialization include: electric power systems, telephone, illumination, communication, audio and electronic-power systems.

2144-110 DESIGN AND DEVELOPMENT ENGINEER, ELECTRICAL AND ELECTRONIC(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I PA: L 4 5 6

Designs and develops circuits for manufacture and installation of electrical and electronic equipment:
Performs duties as described under master title, 01-060 DESIGN

ENGINEER (prof. & tech., n.e.c.). Prepares specifications of circuits for electrical and electronic equipment; such as, turbines, generators, receivers, transmitters, navigational aids, facsimile and computing equipment. Supervises the installation and setting-up of equipment; such as, electrical generating equipment, radar, frequency modulation transmitters and receivers, radiosonde and navigation equipment and electronic computing devices.

May be concerned with designing, developing and installing a specific type of equipment or component and be designated accordingly; for example,

Circuit-Design Engineer

Design Engineer, Radio and Television Broadcasting

Traffic-Circuit Engineer, Telephone Systems

2144-114 RESEARCH ENGINEER, ELECTRICAL AND ELECTRONIC (prof. & tech., n.e.c.) DPT:031 GED: 6 SVP: 8 EC: 1 PA: L 4 5 6

Conducts research into various fields of electrical and electronic phenomena to investigate, evaluate and apply results of this research to solve practical problems:

Studies problems and conducts experimentation concerning generation, transmission and distribution of electrical power and the propagation, modulation and reception of electro-magnetic wave impulses to develop new or more efficient communication, navigation and competing electronic equipment and components. Studies effects; such as, radio interference, loss of wave strength and limitations on radio navigation, diathermy, television, radio and radar equipment related to efficiency of operation, using sophisticated test apparatus and computers, to gather data. Supervises and co-ordinates the work of technologists and technicians. See definition for term title, 02-310 RESEARCH ENGINEER (Prof. & tech., n.e.c.)

May conduct research in a particular area of electrical or electronic phenomena and be designated accordingly; for example,

Electrical-Research Engineer

Electronic-Research Engineer

Illuminating-Research Engineer

Radio-Research Engineer

2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.) DPT:131 GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Studies design proposals and supervises the manufacture, installation, testing, maintenance, modification and repair of electrical equipment and components used for generation, transmission, distribution and utilization of electrical energy by performing any combination of the following duties:

Develops products and systems; such as, domestic electrical appliances, ignition systems, electro-magnets for motors and circuits for power-driven industrial machinery or components. Prepares preliminary cost estimates for construction of facilities; such as, generating, sub-and relay-stations for transmitting power from distribution points to consumers. Determines type and arrangement of circuits, transformers, switches and lighting arresters, using mathematical formulae, and performing complex computations. Supervises installation and lay-out of machinery and equipment to ensure that adequate power supply and protection methods are provided. Directs modification and repair of electrical power systems and of complicated and sensitive automatic controls and components that govern production processes. Prepares working drawings and specifications indicating materials to be used and method of manufacture. Supervises technical aspects of manufacturing processes, and compilation of estimates of labour required and other costs of manufacture, installation, maintenance and repair. Compiles, evaluates and interprets and writes reports. Evaluates technical specifications, examines installed electrical equipment to ensure compliance with safety standards, and recommends modification, maintenance and repair procedures. Supervises and co-ordinates the work of technologists and technicians in various aspects of technical assignments; such as, preparation of schematics, wiring and diagrams and equipment layouts.

May collaborate with engineers in other disciplines and act as a consultant and advise clients for a fee.

2144-122 ELECTRONIC ENGINEER, GENERAL (prof. & tech., n.e.c.) DPT:131 GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Studies design proposals, develops and supervises the manufacture, installation, testing, inspection, repair and maintenance of electronic equipment, systems and components used in fields; such as, communications, entertainment, navigation and data-processing equipment, by performing any combination of the following duties: Prepares preliminary cost estimates for manufacture of electronic equipment and components which involve the passage of electricity through vacuum tubes, gases and semi-conducting materials, such as transistors and diodes, providing a controlled electron flow. Develops test apparatus and devises procedures to evaluate circuits utilizing ferroelectric, nonlinear, dielectric, photo-conductive and thermoelectric properties of materials. Supervises construction of prototype circuits and controls used in equipment; such as, radar, telemetering equipment, guidance and navigation systems, micro-wave systems and electronic data-processing equipment. Supervises construction and operation of individual or central communications systems; such as, telephones, radio and television broadcasting and other communications facilities. Directs maintenance and calibration of electronic test equipment. Supervises manufacture, inspection, testing and installation of electronic components and systems to ensure high quality in manufacturing, and compliance with specifications and safety standards. Prepares reports and process descriptions, instructional manuals on modification, maintenance and repair procedures, and product catalogues for electronic components and systems. Supervises and co-ordinates the work of technologists and technicians.

May collaborate with engineers in other disciplines, and work as a consultant and advise clients for a fee.

2144-126 AUDIO ENGINEER (prof. & tech., n.e.c.) DPT:131 GED: 5 SVP: 8 EC: 1 6 PA: L 4 5 6 7

Develops electronic and mechanical equipment for recording and reproduction of sound in fields; such as, studio broadcasting, motion pictures and public address systems:

Performs duties similar to those of 2144-122 ELECTRONIC ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in developing sound propagation, absorption and reproduction systems within and outside aural range. Designs special types of loudspeakers, enclosures, reverberators and echo chambers.

May assist in the design of studios, halls and recording areas by making suggestions to architects and engineers for improving acoustical properties of structures.

2144-130 DISTRIBUTION ENGINEER (elec. power) DPT:131 GED: 5 SVP: 8 EC: 1 PA: L 4 5 6 7

Plans and develops electrical-power-distribution systems to provide electrical energy for industrial, commercial and domestic users:

Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in the development of electrical-power-distribution systems. Ensures that planning reports are kept up-to-date and essential records maintained. Assigns development of distribution plant to engineering staff, and ensures that it is developed in an economical and logical manner for the complete period of its depreciation life. Analyzes field reports and load forecasts to ensure adequacy of present systems and as a basis for annual revision of forecasts. Prepares feasibility studies on need to extend operation to new areas, considering such factors as field services, designs, and estimates, appraisal of existing electrical distribution systems, and economic matters. Ensures that acquired distribution systems are integrated with existing plant. Provides advice, as required, on problems of operating distribution systems, particularly with regard to system co-ordination, voltage levels, transformer connections, series and shunt capacitor installations, flicker problems and power-bank designs.

May be concerned with a particular type of distribution engineering and be designated accordingly; for example,

Overhead-Distribution Engineer

Underground-Distribution Engineer

2144-134 ELECTRICAL AND ELECTRONIC AEROSPACE ENGINEER(air & space-craft) DPT:131
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Plans and develops aerospace electronic and electrical control equipment for aircraft, spacecraft and rocket vehicles: Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.), and 2144-122 ELECTRONIC ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in designing, developing, and test-operating equipment; such as, communications and navigation apparatus, ground-based control systems of vehicles and their payloads, and remote sensing devices. Plans and oversees tests of control equipment during production and after installation.

2144-138 ELECTRICAL-EQUIPMENT ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Studies design proposals and supervises development, manufacture and installation of various types of electrical machinery and apparatus forming part of complete assembly of industrial and commercial machinery and equipment: Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in developing and supervising the manufacture and installation of various types of motors, generators, converters, rectifiers, transformers, regulators and switch gear that form part of the complete assembly of industrial and commercial machinery and equipment; such as, ignition systems, electric hoists, cranes, portable welding equipment and materials- handling equipment. May develop and supervise manufacture of instruments and equipment used with seismographs, magnetometers and other instruments in petroleum prospecting, and be designated accordingly; for example, Electrical-Prospecting Engineer(petrol. & nat. gas)

2144-142 ELECTRICAL-SYSTEMS-PLANNING ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: S 4 5 6 7

Plans and supervises installation, operation and maintenance of electrical generation and transmission systems and conducts feasibility studies for alternative systems: Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in studying proposed systems to establish short-and long-range planning objectives for major electrical components; such as, generation, transmission, subtransmission, transformer and substation facilities. Supervises preparation of detailed plans for extension of a major section of electrical system, considering such factors as, equipment characteristics, ground routing, voltage level, electrical characteristics of lines and allocation of system equipment, using computer services. Analyzes system-load data including historical records and official hydro-load forecasts, and collaborates with distribution engineers to ensure adequate capacity is provided in the system to meet normal and emergency requirements. Advises on preparation of contracts for purchase and sale of power and energy, and for cost of facilities to provide bulk power for major electrical customers served directly from transmission system. May specialize in preparing generating and maintenance schedules, and be designated accordingly; for example, Power-Scheduling Engineer

2144-146 ILLUMINATING ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Studies design proposals, develops preparation of plans, specifications and cost estimates, and supervises the installation and operation of lighting requirements for buildings, streets, highways and outdoor areas: Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in studying the exteriors of structures, interiors and work sites to assess peculiarities, work activity, aesthetic features, availability of natural light and clients lighting requirements. Measures intensity of light at specific locations, using light-sensitive meters to measure foot-candle value of light. Determines type of lighting required; such as, diffused

light, glare free and directional lighting. Prepares sketches of floor and wall plans, under-pavement conduits and feeder lines for highway-lighting systems and traffic- control lights, showing location, spacing and spread of light sources.

May be concerned with a particular phase of illuminating engineering and be designated accordingly; for example, Building-Illuminating Engineer Industrial-Illuminating Engineer Outdoor-Illuminating Engineer

2144-150 PLANT ENGINEER, ELECTRICAL(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Supervises operation and maintenance of plant electrical equipment: Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in inspecting and directing tests of new or repaired installations; such as, switchgear, motors, distribution and feeder circuits, protective equipment, lighting systems, communication and other control systems. Studies technical problems of power and heating applications, distribution, protection, illumination and communications systems in a plant. Lays out and selects electrical equipment and materials for plant additions or alterations, and supervises installations. Determines type, number, location and integration of protective devices; such as, relays, circuit breakers, fuses and grounding devices.

2144-154 SIGNAL ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: L 4 5 6 7

Plans and develops electrical circuitry and electronic systems for the manufacture and installation of railway signals, train control and identification equipment: Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.), and 2144-122 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in developing electric colour-light signal systems and protective safety devices used on railroads; such as, light signals, highway crossing protective devices, and lines and fixtures for centralized-traffic-control installations and sub-stations. Analyzes systems incorporation solid-state coded equipment, digital codes and frequency overlay circuits to allow several messages to utilize one circuit simultaneously.

2144-158 TELEPHONE ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: L 4 5 6 7

Studies design proposals, develops central and individual communications systems and facilities, and supervises their construction, installation, maintenance and repair: Performs duties similar to those of 2144-122 ELECTRONIC ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in analyzing traffic and economic studies and engineering estimates from reports of other departments to establish balance between service and economics, and determine type, location and layout of telephone equipment, such as toll, dial, teletypewriters, switching equipment, cable conduits, submarine cables and micro-wave systems. Computes changes in revenue costs to connecting telephone companies, based on additional facilities investment. Advises on protection of telephone service and facilities in conjunction with power companies in the field of inductive co-ordination to prevent noise, cross-talk, electrolysis and other adverse electrical effects. May be concerned with a particular phase of telephone engineering and be designated accordingly; for example, Antenna Engineer Outside-Plant Engineer Telegraph Engineer Transmission-Protection Engineer

2144-162 TRANSMISSION ENGINEER(elec. power) DPT:131
GED: 5 SVP: 8 EC: I PA: L 4 5 6 7

Plans, estimates costs and supervises construction of transmission lines for carrying power from source to distribution points: Performs duties similar to those of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in laying out transmission lines and facilities, prepares drawings, and specifies

type of equipment and materials to be used. Plans equipment installation, and inspects complete work for efficient operation and compliance with specifications and safety standards. Co-ordinates all phases of transmission construction, visits proposed sites, and selects route which will avoid interference with telephone or other lines. Submits data on proposed route to appropriate department to obtain necessary easements. Arranges for aerial, topographical and other surveys to obtain data pertinent to planning line routes. Devises steel- and wood-supporting structures for cables, and prepares sketch showing their location. Performs detailed engineering calculations regarding cable sag, pole strength and cable grounding. Prepares and reviews construction schedules to correlate construction with material and equipment deliveries, verifies appropriations, work orders, contractors' progress payments and other cost control documents. May be concerned with a particular aspect of transmission engineering and be designated accordingly; for example,
Cable Engineer
Line-Construction Engineer

2145-INDUSTRIAL ENGINEERS

This unit group includes occupations concerned with the design, initiation and development of production procedures to manufacture units in large quantities of high competitive quality, while maintaining low production overhead; safe and efficient operations. Typical areas of specialization include: plant lay-out, production methods and standards, cost and quality control and industrial safety.

2145-110 INDUSTRIAL ENGINEER, GENERAL(prof. & tech., n.e.c.) DPT:131
industrial-efficiency engineer.
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Plans and oversees utilization of production facilities to promote efficient, safe and economic use of personnel, materials and equipment. Consults with management and supervisory personnel to ascertain production objectives and identify problems. Plans and supervises time and motion studies, compares results with predetermined standards and makes recommendations to promote efficiency. Analyzes data obtained from studies to establish time and production standards. Initiates or recommends changes in organization, work procedures, methods, equipment utilization, safety programs and other factors to achieve economic objectives. Analyzes requirements of production department in relation to sales forecasts and specific customer requirements. Selects or develops work flow methods which minimize physical exertion, duplication and delays, and rearranges plant layouts to minimize waste space, movement of personnel between equipment and material-handling distances. Plans and recommends program for development, application and continued maintenance of quality control standards for processing materials or fabricating products into finished material or product. Develops performance standards and evaluates results obtained from quantitative and qualitative studies, using statistical methods to establish standards. Informs supervisors and managers how proposed systems or procedures will increase efficiency and output in their departments. Makes recommendations on selection and use of capital equipment and facilities. Supervises and co-ordinates the work of technologists and technicians.
May act as a consultant and advise clients for a fee.

2145-114 INDUSTRIAL HYGIENIST(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I 6 7 PA: L 4 5 6 7

Studies, evaluates and conducts a health program to control those environmental factors or stresses arising in a work situation which may cause sickness, injury or significant discomfort and inefficiency among workers. Collects, measures and analyzes samples of dust, gases, vapors and other potentially-toxic materials to determine adherence to prescribed standards. Investigates adequacy of ventilation, exhaust equipment, lighting and other conditions which may effect employee health. Performs sound-level evaluations to determine relationship of noise to employee discomfort and efficiency. Collaborates with other scientists

and engineers to institute control and remedial measures for potentially hazardous conditions and equipment. Prepares reports, and makes recommendations for control and correction of hazards. Participates in educational meetings to instruct employees in matters pertaining to occupational health. Supervises and co-ordinates the work of technologists and technicians.

2145-118 INDUSTRIAL-SAFETY ENGINEER(prof. & tech., n.e.c.) DPT:131
safety director.
GED: 5 SVP: 8 EC: B PA: L 5 6 7

Analyzes industrial accidents and diseases, identifies potential hazards and develops and introduces safety procedures and devices to minimize conditions which create hazards to life, property, worker morale and efficiency. Examines plans and specifications for new machinery, equipment, buildings and structures to ascertain if all safety precautions have been included. Determines amount of weight that can be placed on plant floor and other supports with safety. Inspects machinery to determine places where danger of injury exists. Designs, builds and installs or supervises installation of guards on machinery, belts and conveyors. Inspects premises for fire hazards and adequacy of fire protection and inspects fire fighting equipment. Studies each accident to determine and overcome its cause. Educates workers to dangers existing in plant, through accident control campaign. Determines ventilation requirements and adequacy of equipment. Inspects work areas for presence of harmful or hazardous dusts, vapours or gases and advises what remedial measures must be taken. Supervises and co-ordinates the work of technologists and technicians. May conduct noise level surveys. May conduct safety and first-aid classes or train first-aid instructors. May be concerned with planning and co-ordinating health programs within a plant.

2145-122 TIME-STUDY ENGINEER(prof. & tech., n.e.c.) DPT:131
industrial-engineering analyst.
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Develops work measurement procedures and directs time-and-motion studies to promote efficient and economic utilization of personnel and facilities. Performs duties similar to those of 2145-110 INDUSTRIAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in directing or conducting observation of personnel at work to determine time-and-motion factors of job duties and set standards. Applies principles of industrial engineering and psychology to evaluate work-method proposals, and collaborates with other engineers in making recommendations to management affecting work methods, wage rates and budget decisions.

2145-126 MANUFACTURING ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Studies and advises on the operation of industrial machinery and equipment to improve its operational efficiency. Performs duties similar to those of 2145-110 INDUSTRIAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in studying hardening, welding, plating, cleaning and other processes, utilizing new or existing machinery and equipment. Plans sequence of operations and efficient steps of manufacturing such as cutting, shaping or forming material. Evaluates performance of existing machinery and equipment to determine suitability for manufacturing process. Recommends replacement or modification of new or existing machinery to ensure operating efficiency within economic limits predetermined by company policy. Co-ordinates work of research and design groups with manufacturing and production departments and acts as a consultant for manufacturing establishments engaged in designing new products.

2145-130 METHODS ENGINEER(prof. & tech., n.e.c.)
DPT:131
methods designer.
GED: 5 SVP: 8 EC: 1 PA: S 7

Analyzes industrial and commercial projects and administrative, operational and office procedures and makes recommendations regarding organization, methods of work and sequence of operations: Performs duties similar to those of 2145-110 INDUSTRIAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in evaluating operational plans, drawings and other specifications of product to be made or service to be rendered, and examines administrative procedures, to identify essential operations. Decides steps to be followed in the process or procedure to select least expensive and most efficient operational method.

2145-134 PRODUCTION ENGINEER(prof. & tech., n.e.c.)
DPT:131
production planner.
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Oversees preparation and improvement of production procedures in industrial plant or office: Performs duties similar to those of 2145-110 INDUSTRIAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in planning and initiating production line methods and sequence of operations to ensure efficient and economic progress of work. Prepares production master plan, taking into consideration sequence and lead time of each operation, tool requirements, machine loads, material and manpower needed and other factors. Plans and schedules contract work, and schedules work flow for each department and operation according to previously established manufacturing sequences. Prepares production reports and charts on progress of work.

2145-138 QUALITY-CONTROL ENGINEER(prof. & tech., n.e.c.)
DPT:131
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and recommends program for development, application and maintenance of quality-control standards for processing materials into finished materials products: Devises quality-control methods for production-line staff and other groups, and develops procedures for inspecting, testing and evaluating new materials and finished products, to ensure adherence to engineering specifications. Assists engineering and sales staff in determining standards for new and existing products. Supervises technologists and technicians engaged in measuring and testing products and tabulating quality and reliability data. Compiles and writes training material and conducts training sessions on quality-control methods.

2147-MECHANICAL ENGINEERS

This unit group includes occupations concerned with applied research, development and design of mechanical equipment and its manufacture; supervision of the operation, maintenance or repair of machines that produce, transmit or consume power or energy and the tools with which machinery and equipment are made, and evaluation of installed plant and processes related to machines. Typical areas of specialization include: heating, air-conditioning, refrigeration, automotive, tool and power engineering.

2147-110 POWER ENGINEER, MECHANICAL(prof. & tech., n.e.c.)
DPT:031
power-plant engineer.
GED: 6 SVP: 8 EC: 1 5 6 PA: L 4 7

Designs thermal power plants, prepares specifications, and advises on erection, operation and maintenance: Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Designs pressure vessels and plant lay-outs using, structural, thermodynamic and operating principles as

applied to steam-plants, refineries, thermal and nuclear power and process plant equipment. May be concerned with a specific type of power engineering and be designated accordingly, Thermal-Power Engineer

2147-114 TOOL ENGINEER(prof. & tech., n.e.c.)
DPT:031
machine-tool designer.
GED: 6 SVP: 8 EC: 1 5 6 PA: S 4 7

Designs machine tools and machinery used for industrial purposes: Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Designs and develops new, or modifies existing machine tools and machinery; such as, dies, lathes, jigs, fixtures and attachments. May design a specific type of machine or tool and be designated accordingly; for example, Design Engineer, Oil-Well Equipment Gauge Designer Tool and Die Designer

2147-118 MECHANICAL ENGINEER, GENERAL(prof. & tech., n.e.c.)
DPT:131
GED: 5 SVP: 8 EC: 1 5 6 PA: L 5 6 7

Arranges, supervises or conducts the study, design, development, construction, operation and maintenance of machines, mechanisms and processes by performing any combination of the following duties: Prepares designs and cost estimates for machines, mechanisms and industrial processes. Analyzes and solves problems concerned with the utilization of power, machinery, materials and equipment as a result of research and experiments. Collates data and writes reports. Supervises preparation of working drawings and specifications, indicating materials to be used and the method of manufacture. Directs feasibility studies, construction, modification and final testing of prototypes, products or pilot plants. Evaluates installed plants, mechanical processes and products to ensure compliance with specifications and safety standards, and recommends modifications, repairs or maintenance procedures. Supervises and co-ordinates the work of technologists and technicians. May work as a consultant or collaborate with engineers and scientists in other disciplines and advise clients for a fee.

2147-122 AUTOMOTIVE ENGINEER(prof. & tech., n.e.c.)
DPT:131
GED: 5 SVP: 8 EC: 1 5 6 PA: L 3 6 7

Studies design specifications, conducts tests, and advises on performance of automotive components: Performs duties similar to those of 2147-118 MECHANICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in testing the performance of automotive components; such as, engines, transmissions, power trains, steering mechanism and brakes to ensure mechanical efficiency and suitability, economical operation and lower manufacturing costs. May specialize in a particular type of engine or component of an automotive vehicle and be designated accordingly, Internal-Combustion Engineer

2147-126 HEATING, VENTILATING AND AIR-CONDITIONING ENGINEER(prof. & tech., n.e.c.)
DPT:131
GED: 5 SVP: 8 EC: 1 PA: L 4 6 7

Studies design specifications of structures, and develops and advises on heating, ventilation and air-conditioning equipment for human comfort and industrial use: Performs duties similar to those of 2147-118 MECHANICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in designing systems, pneumatic controls and electrical circuits of central and utility plant installations to supply heating, ventilation and air-conditioning to homes, factories, schools and other structures. Develops systems to decontaminate air and circulate purified air, with minimum demands on power supplies.

2147-130 LUBRICATION ENGINEER(prof. & tech., n.e.c.)
DPT:131
GED: 5 SVP: 8 EC: I PA: S 4 6 7

Develops, tests and advises on the most efficient and economical oil, grease, and dry lubricant or metal machining fluids for engines, machine tools and other mechanical equipment:

Analyzes design specifications, construction, operation and servicing of equipment or products, and consults with designers, operators and maintenance personnel to determine lubrication problems. Recommends lubricants to reduce effects of friction, wear, vibration, power loss, corrosion and leakage. Conducts investigations and experimental tests to develop new types of lubricants. Tests measuring and recording instruments, pumps, filters and regulators used to evaluate lubricants. Develops and writes operating procedures indicating factors such as rates of feed of lubricants under various conditions, frequency of change, methods of cleaning and filtering, reclamation and storage techniques. Conducts seminars for training and guidance of marketing staff. Plans and arranges programs to implement product changes and improvements, and collates information received from area sales representatives. Supervises and co-ordinates the work of technologists, and technicians.

2147-134 MECHANICAL ENGINEER, GAS UTILIZATION(prof. & tech., n.e.c.) DPT:131
utilization engineer.
GED: 5 SVP: 8 EC: I 6 PA: L 5 6 7

Designs equipment and solves engineering problems concerned with industrial and domestic utilization of manufactured or natural gas: Performs duties similar to those of 2147-118 MECHANICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in studying industrial processes to determine where and how gas-fuel consuming equipment can be utilized, and prepares designs to meet process requirements.

May solve problems concerned with air-conditioning and heating units, using gas as a source of power. May endeavour to convince industrial concerns of advantages of using gas over oil, coke, coal or electricity as a source of power for various operations.

2147-138 PROPULSION ENGINEER, AEROSPACE VEHICLES(air & space-craft) DPT:131
GED: 5 SVP: 8 EC: B 5 7 PA: L 4 7

Designs and supervises development and operation of flight propulsion systems:

Performs duties similar to those of 2147-118 MECHANICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Designs and develops aero-engines, rocket motors, power-plant systems, gearings and transmission. Plans and designs power-plant installations. Prepares and supervises test programs and analyzes test data to ensure propulsion systems meet design standards.

2147-142 REFRIGERATION ENGINEER(prof. & tech., n.e.c.)
DPT:131
GED: 5 SVP: 8 EC: I 7 PA: L 4 6 7

Studies design specifications of structures, develops and advises on refrigeration systems and equipment, primarily for industrial use:

Performs duties similar to those of 2147-118 MECHANICAL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in designing electrical controls and circuits for refrigeration systems including thermo-electric and thermionic systems. Studies effects of certain liquefied gases as direct refrigerants for special low-temperature purposes. May perform some of the duties of 2144-118 ELECTRICAL ENGINEER, GENERAL (prof. & tech., n.e.c.).

2151-METALLURGICAL ENGINEERS

This unit group includes occupations concerned with studying properties and characteristics of metals; developing, controlling and advising on processes for the extraction of metals from their ores; developing alloys; overseeing metal-manufacturing processes for making finished products. Physi-

cal Metallurgists and Metallographers are classified in Unit Group 2119, OCCUPATIONS IN PHYSICAL SCIENCES, N.E.C.

2151-110 METALLURGICAL ENGINEER(prof. & tech., n.e.c.) DPT:131
metallurgist, extractive.
GED: 5 SVP: 8 EC: I 5 6 7 PA: L 4 5 6 7

Studies the properties of metals, develops and advises on various processes to win metals from their ores, to produce iron, steel and other metals:

Studies ore production problems in pyrometallurgy and hydrometallurgy to determine the most efficient method of producing ores in commercial quantities. Co-ordinates recovery of samples from various stages of processing, for laboratory analysis. Advises operations personnel on process changes, reagent consumption and electric current adjustments required to obtain desired process, and on quality control. Specifies temperature adjustments, charge mixtures and other variables in blast-furnace operations to obtain pig iron and steel or other ore concentrate of specified quality. Investigates methods of improving metallurgical processes; such as, selective oxidation, electrolysis and distillation, to extract lead, mercury, nickel and other ferrous and non-ferrous metals from their ores. Prepares cost budget of operations to evaluate economic feasibility of processes. Supervises and co-ordinates the work of technologists, and technicians.

May specialize in extraction of ferrous, non-ferrous or a particular metal. May be concerned with a particular aspect of metallurgical engineering and be designated accordingly; for example, Foundry Metallurgist
Hydrometallurgical Engineer
Mineral-Dressing Engineer
Mould-Design Engineer
Pattern Engineer
Pyrometallurgical Engineer

2153-MINING ENGINEERS

This unit group includes occupations concerned with conducting studies on mining engineering problems; determining mine location; planning and designing the development of the mines, mine facilities, systems and equipment; advising on methods of extracting coal, minerals and metal-bearing ores from the earth; planning; organizing and supervising the extraction of minerals and their preparation or processing. Typical areas of specialization include: operation of mines and mine safety, ventilation, water supply, power, communications and maintenance of equipment.

2153-110 MINING ENGINEER(prof. & tech., n.e.c.) DPT:131
mineral engineer.
GED: 5 SVP: 8 EC: B 6 7 PA: L 4 5 6 7

Determines location, and prepares plans for extraction of coal, minerals and metal-bearing ores from the earth, and the design and development of mining facilities:

Conducts preliminary surveys of mineral deposits, in collaboration with geologists or prospectors, to ascertain whether ore can be extracted economically. Determines most suitable method, or combination of methods, of extraction by considering factors; such as, depth of overburden, character of deposit and surrounding strata. Prepares plans for location and construction of mine shafts, tunnels and chambers, and ensures consideration is given to using proper drilling and blasting techniques. Selects most efficient and economical underground materials-handling equipment to transport minerals to the surface. Collaborates with engineers, in other disciplines, to design, select or provide machines, systems or facilities that are best suited to mine's requirements; such as, separating, cleaning, grading and reduction equipment and access roads, water and power supply, drainage, ventilation, mine railways and conveyors. Plans and co-ordinates utilization of manpower and equipment consistent with efficiency, safety, and environmental conditions. Prepares operation and project estimates, and controls expenditures when mine comes into production. Supervises and co-ordinates the work of technologists and technicians.

May work as a consultant and advise clients for a fee. May coordinate mine-rescue and recovery facilities by ensuring that rescue stations are properly maintained and trained rescue personnel are located at the mine. May specialize in one particular phase of mining engineering and be designated accordingly; for example,

Mine-Lay-Out Engineer
Mine-Planning Engineer
Mine-Production Engineer
Mine-Ventilation Engineer

2154-PETROLEUM ENGINEERS

This unit group includes occupations concerned with studying geological surveys, earth samples and other data to advise on the means of developing oil and gas fields and the equipment to be used in the extraction, storage and initial treatment prior to transportation. Typical areas of specialization include: exploration, drilling, core and mud analysis, conservation and transportation.

2154-110 CHIEF-PETROLEUM ENGINEER(oil & nat. gas) DPT:031

GED: 6 SVP: 8 EC: B PA: S 5 6 7

Plans and directs activities of engineering departments of petroleum company to develop oil fields and pipelines, and advises management on engineering problems:

Apportions work among engineering staff engaged in drilling new wells, gas or oil production, maintaining well logs, developing and improving drilling and production equipment, investigating composition of drilling mud, dehydration of crude petroleum and recovery procedures for oil and gas. Reviews engineering designs for accuracy of presentation. Formulates plans, designs, estimates and specifications for oilfield or pipeline construction, oil and gas drilling, pump station construction, crude oil treating units, maintenance, modification and modernization programs. Supervises computation of operating budgets, reports and special studies to assist in evaluation of engineering programs. Supervises selection, installation, use and repair of oilfield exploration and production equipment.

May co-ordinate projected activities with other departments such as electrical, mechanical or civil engineering. May supervise petroleum geologists, geophysicists or seismograph computers in exploration and discovery of oil fields. May give technical advice to drilling and production managers on new techniques developed as a result of experiment or experience. May be classified according to engineering specialty and designated as follows; for example,
Chief Engineer, Drilling and Recovery
Chief Engineer, Production

2154-114 PETROLEUM ENGINEER(prof. & tech., n.e.c.) DPT:131

GED: 5 SVP: 8 EC: B 6 PA: L 4 5 6 7

Studies and advises on petroleum and natural gas extraction engineering problems and plans, organizes and supervises the extraction of petroleum and natural gas:

Studies geological surveys, and other data, with samples and advises on types of derrick and drilling equipment to be used. Computes and maps inclination of boreholes from photographic records and observations obtained from subsurface directional surveys. Plans method of drilling to maintain verticality of borehole and directs plugging and redrilling of crooked holes. Directs drilling crew in use of whipstocks, knuckle joints and special joints. Recommends, and supervises the use of drilling mud and casing cement, and directs gun-perforating, squeeze-cementing and other special techniques to solve drilling problems. Investigates and tests new drilling equipment and suggests any modifications required. Directs testing of boreholes to determine pressures, temperatures, strata encountered and other factors. Devises methods of bringing wells into production and controlling flow of oil or gas. Initiates means to re-establish flow after natural flow has ceased. Recommends procedures for treating oil to remove sediment and water. Supervises maintenance and cleaning of producing wells and operating equipment. Determines oil-gas ratios, of producing wells, and designates allowable flow to meet proration regulations. Compiles logs for each well, production records on flowing wells and other data. Prepares regular engineering reports and

conducts special studies on subjects; such as, salt water enroachment, operating equipment and conservation problems.

May assist on geological and geophysical surveys. May work as a consultant and collaborate with engineers in other disciplines and advise clients for a fee. May specialize in drilling and recovery, production or natural gas-well engineering and be designated accordingly; for example,

Natural-Gas Engineer
Petroleum Engineer, Drilling and Recovery
Petroleum Engineer, Production

2154-118 RESERVOIR ENGINEER, PETROLEUM(prof. & tech., n.e.c.) DPT:131

GED: 5 SVP: 8 EC: B 6 7 PA: L 4 5 6 7

Analyzes and predicts the behaviour of individual wells and oil and gas reservoirs and their economic significance:

Studies geological samples, records of reservoir pressure, and gas, oil and water production. Utilizes knowledge of basic physical principles of fluid flow and conservation of mass to determine behaviour of reservoir. Correlates this data with the operational data obtained from petroleum engineers to estimate the ultimate production and value of products. Plans recovery schemes, as a result of these studies, taking into consideration well densities, flow rates and recovery methods to determine the most profitable and efficient approach to the exploitation of reservoir. Supervises and co-ordinates the work of technologists and technicians.

2155-AEROSPACE ENGINEERS

This unit group includes occupations concerned with research, design, development, manufacture, and maintenance of aerospace vehicles and equipment for flight in and out of the earth's atmosphere, and preparation of their operational specifications. Typical areas of specialization include: aerodynamics, thermodynamics, mass and weight analysis, systems and weapons control and flight testing. Includes engineers specializing in air-cushion vehicles.

2155-110 AEROSPACE ENGINEER, DESIGN AND DEVELOPMENT(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: B PA: L 4 7

Analyzes, evaluates and designs, and advises on development of specifications for aerospace engines, systems, structures, components and support equipment:

Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Designs and develops aerospace vehicles, systems and components; such as, hydraulic, pneumatic, pressurization, air conditioning, oxygen and fire extinguishing systems, and electronic navigation and communications equipment, ordnance and fire control devices and electro-optical-magnetic sensors and computers. Studies and develops appropriate configuration of aircraft, spacecraft and rocket vehicles. Analyzes behaviour of airflow to determine aerodynamic and thermodynamic qualities. Analyzes new designs or major modifications to determine weight distribution, and advise designers and operators on efficient distribution of equipment and movable loads. Evaluates results of research and prepares reports for manufacturers, regulatory bodies or operators on properties of various materials and effectiveness of various manufacturing processes.

May design and develop specific materials, systems, structures and components and be designated accordingly; for example,
Aerodynamicist(air & space-craft)
Aerospace Engineer, Structures
Aerospace Engineer, Systems Analysis
Aerospace Engineer, Systems Installations

2155-114 AEROSPACE ENGINEER, MASS PROPERTIES(prof. & tech., n.e.c.) DPT:038
weight and balance engineer; weight analyst, aerospace vehicles.
GED: 6 SVP: 8 EC: B PA: L 4 7

Estimates and specifies weights and balances of parts, components and assemblies of aerospace vehicles:
Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Analyzes weight distribution factors, involved in new design and major modification, and translates resulting mathematical equations into form for solution by analog or digital computer. Combines mathematical solutions with other data to prepare weight distribution estimates for preliminary design studies. Confers with other aerospace engineers to ensure co-ordination of weight and balance estimates and other phases of aerospace vehicle development. Compares efficiency of alternative designs. Develops operational weight and balance, and loading instructions. Studies and develops methods of mass estimation, measurement and control.

2155-118 AEROSPACE ENGINEER, GENERAL(prof & tech., n.e.c.) DPT:131
aeronautical engineer.
GED: 5 SVP: 8 EC: B PA: L 4 6 7

Studies designs for aerospace vehicles; such as, civilian and military aircraft, air cushion vehicles, rockets and satellites, and supervises their manufacture, testing, modification, maintenance and repair by performing any combination of the following duties:
Studies designs and prepares cost estimates for various types of aerospace vehicles, components and support equipment. Examines controls, structural integrity and stability, and other characteristics in a laboratory or under flight conditions. Analyzes and solves problems arising from these experiments to ensure that aerospace vehicles are capable of meeting operational environmental conditions. Studies airframes under stress conditions to determine solutions to problems, such as those resulting from metal fatigue and flutter. Supervises preparation of working drawings and specifications. Supervises the assembly of airframe and installation of engines, instruments and other equipment. Evaluates test flights to ensure vehicle conforms to specifications and safety standards. Recommends or authorizes modifications, repairs or maintenance. Supervises and co-ordinates the work of technologists and technicians.

2155-122 AEROSPACE ENGINEER, FLIGHT-TEST(air & space-craft) DPT:031
GED: 5 SVP: 8 EC: B PA: L 4 7

Plans and directs flight tests of experimental aircraft, space- craft and rocket vehicles, their systems and equipment:
Performs duties similar to those of 2155-110 AEROSPACE ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in studying and interpreting specifications issued by regulatory agencies, customers and design engineers. Prepares test schedules and flight plans of experimental aerospace vehicles and participates in flight tests. Evaluates design and specifies purchase of test equipment. Supervises calibration of test equipment, and recording and compiling of flight test data. Evaluates and reports on flight test results. Develops operational techniques and prepares related instructions.

2155-126 AEROSPACE ENGINEER, MATERIALS AND PROCESSES(air & space-craft) DPT:031
GED: 5 SVP: 8 EC: B PA: L 4 7

Plans and oversees control of materials and processes in the manufacture and repair of aircraft, space-craft and rocket vehicles, their powerplants and equipment:
Performs duties similar to those of 2155-110 AEROSPACE ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in preparing specifications and procedures for the use of material and for processes; such as, shop applications, standards, inspection and tests. Advises engineering, manufacturing and quality control departments on properties, application, treatment and salvage of materials and substitute materials. Maintains liaison with material suppliers.

2155-130 AEROSPACE ENGINEER, FLIGHT OPERATIONS(air & space-craft) DPT:131
GED: 5 SVP: 8 EC: B PA: L 4 6 7

Co-ordinates the flight tests of air and space-craft in production and in operations:
Compiles material for operating manuals. Prepares flight tests required as a result of overhaul and maintenance of aerospace vehicles. Participates in flight tests as aircrew member, and evaluates test results. Supervises and advises aircrew of flight procedures to ensure proper aircraft operation. Performs other engineering functions in connection with vehicle flight performance and related operational problems.

2155-134 AEROSPACE ENGINEER, FLIGHT SUPPORT(air & space-craft) DPT:138
GED: 5 SVP: 8 EC: B PA: L 4 7

Studies, plans and advises on the utilization of flight support equipment and facilities:
Specifies equipment for various ground-support functions; such as, ramp equipment including air-conditioning, refuelling, launching and test equipment, installations and systems. Evaluates available support equipment for suitability of performance. Confers with designers and suppliers and suggests modifications to equipment to ensure compliance with requirements. Prepares test schedules to verify performance of flight-support equipment. Schedules the availability of equipment in proper locations and quantities to meet operational requirements. Supervises and co-ordinates the work of technologists and technicians.

2157-NUCLEAR ENGINEERS

This unit group includes occupations concerned with applying the principles and theory of nuclear science to problems related to release, control and utilization of nuclear energy for the transmutation of elements and the productive efficiency of nuclear reactors. Typical areas of specialization include: design of components for reactors and nuclear energy systems, analysis of radiation effects and shielding-design problems, processing radioactive materials and waste, and radiological-safety control.

2157-110 NUCLEAR ENGINEER(prof. & tech., n.e.c.) DPT:031
GED: 6 SVP: 8 EC: I 6 PA: L 7

Applies engineering principles in the research, design and development of plant and equipment for the release, control and utilization of nuclear energy, and plans and supervises their development, manufacture, installation, maintenance and repair:
Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.) Designs components of reactors and nuclear energy systems. Analyzes radiation effects and shielding-design problems in the processing of radioactive materials and radioactive waste. Ensures that radiological safety-control measures are instituted and enforced. Directs operational and maintenance activities in nuclear facilities. Supervises and co-ordinates the work of technologists and technicians in various aspects of nuclear engineering.

2159-ARCHITECTS AND ENGINEERS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with the practical application of the laws and principles of architecture and engineering for the design, development, installation, production, utilization or maintenance of machines, materials, instruments, structures, processes and services. Marine engineer officers in water transportation are classified in Unit Group 9153, ENGINEER OFFICERS, SHIP.

2159-110 AGRICULTURAL ENGINEER(prof. & tech., n.e.c.)

DPT:031

GED: 6 SVP: 8 EC: B PA: L 5 6 7

Studies and advises on engineering problems unique to agriculture, designs agricultural machinery, structures and equipment, and supervises their manufacture, construction and installation:

Performs duties as described under master title 01-060, DESIGN ENGINEER (prof. & tech., n.e.c.). Develops criteria for design, manufacture or construction of equipment, structures and facilities, such as machines for agricultural automation, processing equipment and systems for dairy and food plants, and controlled atmosphere buildings for animal and food products in conjunction with civil and mechanical engineers. Designs sensing, measuring and recording devices and instrumentation for the study of problems such as, effects of temperature, humidity and light on plants and animals, or the relative effectiveness of different methods of applying insecticides. Designs and supervises installation of equipment and instruments used to evaluate and process farm products, and to automate agricultural operations. Designs and supervises construction of agricultural buildings and accessory equipment incorporating materials of all kinds, in accordance with Farm-Building Standards of the National Building Code. Supervises and co-ordinates the work of technologists and technicians.

May work as a consultant and advise clients for a fee. May specialize in the design and layout of a particular product or system in food or dairy product processing and be designated accordingly; for example, Dairy-Plant Engineer.

2159-114 CERAMICS ENGINEER(prof. & tech., n.e.c.)

DPT:031

GED: 6 SVP: 8 EC: I 3 6 7 PA: L 4 7

Conducts research, design and development of machinery and processing techniques concerned with the manufacture of ceramic products:

Supervises testing of physical, chemical and heat-resisting properties of materials, such as clays and silicas. Analyzes test results to determine combination of materials which will improve quality and reduce costs of products. Conducts research into processing methods including forming and firing of raw materials, to develop ceramic products, such as ceramic furnace liners, ceramic tools and other products. Prepares design of equipment and apparatus for forming, firing and handling products. Co-ordinates testing of finished products for characteristics; such as, texture, colour, durability, glaze and refractory properties. Supervises and co-ordinates the work of technologists, and technicians engaged in various ceramic processes. See also definition for term title, 02-310 RESEARCH ENGINEER (prof. & tech., n.e.c.).

May specialize in one branch of ceramic production; such as, brick, glass, crockery, tile or pipe. May specialize in developing heat-resistant and corrosion-resistant materials for use in jet and rocket propulsion and in nuclear energy field.

2159-118 MARINE ENGINEER(ship & boat bldg.) DPT:031

GED: 6 SVP: 8 EC: B PA: L 2 3 4 5 6 7

Designs and supervises installation and repair of marine power plants, propulsion systems, heating and ventilating systems and other mechanical and electrical equipment in ships and marine facilities:

Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Studies drawings and specifications and performs complex calculations to conceive equipment and systems designed to meet requirements of marine craft or facility. Prepares cost estimates for engineering contract bids, referring to technical drawings and specifications. Supervises repair of ship equipment; such as, power plants, propulsion systems and other electrical and mechanical equipment. Oversees and evaluates operation of this equipment during acceptance testing and shakedown cruises. Supervises and co-ordinates the work of technologists and technicians in various phases of marine engineering.

2159-122 SHIP-CONSTRUCTION ENGINEER(prof. & tech., n.e.c.) DPT:031

GED: 6 SVP: 8 EC: B PA: L 2 3 4 5 6 7

Designs and supervises construction, repair, and trials of marine vessels and floating structures of all types:

Consults with owners, shipping organizations and oceanographic research institutes to prepare preliminary ship designs and capital and life time cost estimates. Carries out studies; such as, hydrostatic, hydrodynamic, strength and vibration calculations, to determine optimum vessel weight and to ensure that proposed design meets desired performance requirements. Establishes operational constraints and alternatives as a result of these studies. Directs preparation of detailed ship-design contract package consisting of drawings, specifications and building contracts, co-ordinating the input of other engineering participants, such as engine designers and systems engineers. Obtains approval of plans by governmental or other regulatory agencies, as required by legislation. Exercises overall supervision of ship during construction, either as the owners' representative or shipbuilders' superintendent, by enforcing uniform standards and quality assurance inspections and supervises and co-ordinates the work of technologists and technicians. Directs preparation of, and approves, launching calculations. Attends inspections and trials to ensure vessel is classed by regulatory authorities and that all contractual requirements have been met.

May negotiate technical or financial changes in contract and approve term payments. May specialize in design of naval vessels and be designated accordingly, Naval Architect

2159-126 GAS AND STEAM-DISTRIBUTION

ENGINEER(prof. & tech., n.e.c.)

DPT:081

GED: 6 SVP: 8 EC: I PA: L 4 7

Designs, estimates costs and prepares specifications for the installation, maintenance and repair of gas or steam mains and for extension of existing mains and distribution equipment and facilities: Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Studies maps of existing mains and investigates records of other underground pipe and cable installations to avoid interference with existing installations. Supervises and co-ordinates the work of technologists and technicians. May supervise the survey of the location of underground installations to ensure proper grading. May prepare instructions for operation and maintenance of meters, pipes, mains, odorizers and related distribution facilities. May be concerned with a particular type of energy being distributed and be designated accordingly; for example, Gas-Distribution Engineer(utilities, n.e.c.) Steam-Distribution Engineer(utilities, n.e.c.)

2159-130 CRYOGENICS ENGINEER(prof. & tech., n.e.c.)

DPT:138

GED: 6 SVP: 8 EC: I 2 6 7 PA: L 4 7

Applies established engineering principles to design and development of cryogenic materials and equipment, and supervises the construction of cryogenics equipment and plants:

Performs duties as described under master title, 01-060 DESIGN ENGINEER (prof. & tech., n.e.c.). Produces oxygen and nitrogen supplies using processes, such as, liquefaction and fractional distillation of air. Designs equipment; such as, special pumps, valves, insulation systems and other components, for experimental use at low temperatures. Develops methods and techniques to liquefy natural gas, for use in various industrial processes, and for shipment by road, rail and sea. Supervises and co-ordinates the work of technologists and technicians in direct support of a particular phase of cryogenic engineering activity.

May report or supervise preparation of reports on research activity, and collate data in coherent descriptions of cryogenic phenomena.

2159-134 GEOLOGICAL ENGINEER(prof. & tech., n.e.c.)

DPT:031

GED: 5 SVP: 8 EC: B 6 PA: L 4 5 7

Investigates prospective areas for the occurrence of geological structures that might be oil or mineral bearing:

Examines and performs quantitative analysis of seismic and other geological data, using geochemical instruments to assess development potential of mineral, gas, oil and underground water resources. Interprets records of computations and of electronically processed seismic data, and prepares seismic cross-section charts to evaluate methods used to locate oil and mineral-bearing structures. Gathers and studies data relating to ore deposits to advise mining engineers and production personnel on most economical methods of extraction. Interprets records obtained in the field. Advises on engineering

problems encountered in projects; such as, construction of dams, bridges, tunnels and large buildings, applying results of geological investigations. Supervises and co-ordinates the work of technologists and technicians.
May conduct laboratory research into development of new instruments and improved techniques using these instruments. May be concerned with one particular phase of geological engineering and be designated accordingly; for example,
Mining Geologist

2159-138 FOREST ENGINEER(forest. & log.) DPT:131
logging engineer.
GED: 5 SVP: 8 EC: B PA: L 5 6 7

Plans timber cutting, loading and storing areas:
Performs duties similar to those of 2143-110 CIVIL ENGINEER, GENERAL (prof. & tech., n.e.c.). Specializes in reviewing survey maps and air photographs to determine most suitable location for cutting, storing and loading areas. Selects equipment and devises methods of handling and transporting logs. Advises on and supervises construction, installation and use of structures, equipment, transportation facilities, and maintenance of roads, bridges, camp sites and camp structures.

2159-142 WELDING ENGINEER(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: I 5 6 PA: L 4 5 6 7

Studies design proposals, and develops shop and field procedures and techniques for the fabrication of welded connections and welding equipment:

Analyzes mechanical drawings and specifications to determine most practical design to facilitate economical welding of parts, taking into consideration such factors as, equipment available, types of joint preparation, use of jigs, positioners and manipulators, and the use of formed plate, tubular sections, forgings and castings. Recommends use of metals, alloys, welding equipment and techniques according to specification of product. Develops suitable sequences for shop and field welding to control distortion and residual stress, static and fatigue-loading and joint behaviour. Tests weldments to ensure joints meet requirements, using radiographic and other apparatus. Conducts experiments to develop and improve equipment and methods of welding pure metals and alloys, utilizing knowledge of physical metallurgy. Supervises quality control of welding processes independently or in conjunction with inspection department. Supervises and co-ordinates the work of technologists and technicians in various phases of welding activities.

2159-146 FIRE-PREVENTION ENGINEER(prof. & tech., n.e.c.) DPT:181
GED: 5 SVP: 8 EC: B6 PA: S 5 6 7

Conducts studies to determine cause of fires and their prevention, and prepares educational material concerning fire prevention:
Tests and classifies building materials, chemicals, paints, interior design materials or other combustibles, and catalogues and publishes results to assist users, such as, safety associations, governments, public or private institutions in establishing standards for building codes. Determines safe distances from the public for storage of combustible materials. Studies and analyzes reports and statistics to determine fire causes and losses. Investigates fire hazards in building construction and overheating of electrical systems, and develops safety measures to overcome them. Prepares instructions, posters, films, codes and regulations to prevent fires and to minimize fire hazards.

2159-150 TRAFFIC ENGINEER(prof. & tech., n.e.c) DPT:138
traffic-operations engineer.
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Studies vehicular-traffic conditions on urban or rural roads and develops plans for altering conditions to promote safety and reduce congestion:

Studies traffic conditions from fixed position, vehicle or helicopter to detect unsafe or congested conditions and observe location of alternative routes. Evaluates statistical and physical data supplied by engineering staff, regarding such factors as vehicle count per mile, load capacity of pavement, feasibility of widening pavement and future projected traffic loads. Conducts experiments with alternative traffic plans on nearby routes and on same route with modification in signals, traffic direction, or other control devices and techniques. Evaluates results of experiments and recommends changes to improve conditions. Confers with various citizens, businessmen and government officials to resolve complaints concerning traffic problems requiring co-operation of public or other jurisdictions. Recommends major capital investment expenditures to responsible officials. Supervises and co-ordinates the work of technologists and technicians in various phases of traffic engineering.

May prepare speeches and public-information material to enlist co-operation of public in reducing congestion and accidents. May integrate results of traffic studies with work of other agencies to develop transportation plan.

2159-154 CORROSION ENGINEER(prof. & tech., n.e.c.) DPT:168
GED: 5 SVP: 8 EC: B PA: L 5 6 7

Applies accumulated scientific knowledge to the abatement of corrosion damage, by practical and economic means:

Designs cathodic protection systems to prevent corrosion of buried pipelines, steel jetties, submerged marine structures and off-shore drilling rigs. Recommends metals suitable for specific industrial applications to eliminate galvanic, stress-cracking and other forms of corrosion in chemical process plants, pulp and paper plants, ships, pipelines and bridges and other structures. Develops and tests new and better protective coatings, and prescribes proper dosages of corrosion inhibitors to combat air, water and soil pollution and corrosion. Develops anodic passivity systems for chemical storage tanks to eliminate corrosion and contamination. Determines existence of, and takes measures to prevent and remove damaging stray electric currents. Studies destructive properties, corrosive action and problems of deterioration of soil, suggests methods of preventing or mitigating the trouble, and explains the mechanisms of corrosion failures to scientists, engineers and other persons concerned.

2159-158 LOGGING ENGINEER, OIL WELL(prof. & tech., n.e.c.) DPT:261
GED: 5 SVP: 8 EC: B6 PA: L 4 5 6 7

Measures sonar, electrical or radioactive characteristics of earth formations in oil-or-gas well boreholes to evaluate productivity of oil-or-gas-bearing reservoirs:

Signals hoist operators to lower measuring instruments into well and observes oscillograph and meters on control panel to verify operating conditions of instruments. Turns dials on control panel to adjust instrument for specified recording and starts recording device when instruments reach bottom of borehole. Prints copies of recorded graphs in truck dark room. Interprets graphs to indicate identity, porosity, oil-or-gas-bearing content and productivity of geological formations. Measure borehole diameters, direction of borehole and inclination of geological strata, using microcalipers, clinometers and dipmeters.

216-OTHER OCCUPATIONS IN ARCHITECTURE AND ENGINEERING

This minor group includes occupations concerned with collecting, analyzing and plotting marine survey data and surveying the earth's surface; preparing working plans, detailed drawings and maps to specific dimensions for engineering, manufacturing, construction and exploration purposes; and carrying out technological and technical functions in specializations, such as chemical, civil, electrical, industrial and aeronautical engineering; and in architecture, using knowledge of scientific, mathematical and draughting design and other principles. These occupations are classified in the following unit groups:

- 2160** Supervisors, Other Occupations in
Architecture and Engineering
- 2161** Surveyors
- 2163** Draughtsmen
- 2165** Architectural and Engineering
Technologists and Technicians
- 2169** Other Occupations in Architecture and
Engineering, n.e.c.

2160-SUPERVISORS, OTHER OCCUPATIONS IN ARCHITECTURE AND ENGINEERING

This unit group includes occupations as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.) concerned with activities of workers engaged in surveying, draughting, and in engineering technology.

2160-110 SUPERVISOR, ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS (prof. & tech., n.e.c.) DPT:138

Supervises and co-ordinates the activities of technologists and technicians engaged in direct support of architects, and in support of engineers in chemical, civil, electrical, industrial, mechanical, petroleum and aerospace engineering and related fields, (Unit Group 2165):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with the supervision of technologists and technicians in a particular branch of architecture or engineering and be designated accordingly.

Supervisor, Material Testing

2160-114 SUPERVISOR, DRAUGHTSMEN (prof. & tech., n.e.c.) DPT:138 chief draughtsman.

Supervises and co-ordinates the activities of draughtsmen engaged in the preparation of working plans and detailed drawings, maps, specifications and estimates in manufacturing, industrial, commercial and other establishments, (Unit Group 2163):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with the supervision of a particular branch or specialty and be designated accordingly; for example,

Draughtsman, Chief Design (elec. power; utilities, n.e.c.)
Supervisor, Electrical Draughting
Supervisor, Estimator and Draughtsman (elec. power)
Supervisor, Mapping (oil & nat. gas)
Supervisor, Marine Draughting
Supervisor, Mechanical Draughting

2160-118 SUPERVISOR, SURVEYORS (prof. & tech., n.e.c.) DPT:138

Supervises and co-ordinates the activities of surveyors and survey parties engaged in determining linear and angular measurements of points, areas, elevations and boundaries, or contours and other topographical features, or in hydrographic mapping, (Unit Group 2161):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with the supervision of a particular section, area or region and be designated accordingly.

2161-SURVEYORS

This unit group includes occupations concerned with surveying land surfaces to determine boundaries and exact locations, delineate topographic features and measure land areas for the purpose of mapmaking and construction work, surveying mines and delineating surface and underground features to control direction and extent of mining; surveying sea, river and lake beds for such purposes as chart making, determining navigable channels and planning construction of marine structures, and analyzing aerial photographs to prepare or revise topographic maps and charts.

2161-110 HYDROGRAPHIC SURVEYOR (prof. & tech., n.e.c.) DPT:131 marine surveyor. GED: 5 SVP: 7 EC: B 4 PA: M 2 3 4 5 6 7

Performs a variety of complex technical functions in the collection, analysis and plotting of marine survey data used in the production of nautical publications, such as navigational charts, sailing directions and tide tables:

Studies existing documents on the location of geographic control positions, field manuscripts, charts, and other publications to plan method and procedure of executing hydrographic survey. Assists in the precise locating of visual and electronic position-finding shore stations, such as triangulation and traversing. Determines angular and linear measurements, and relates them to existing geodetic control points, using sextant, tellurometer, transit, level and electronic position-finding devices. Installs temporary tide gauge that automatically monitors times and heights of tide movements, at site of survey, to establish tidal bench mark. Anchors current meter at predetermined depth below surface to record automatically direction and speed of currents at fixed intervals. Directs operation of survey launch or recommends positioning and manoeuvring of ship as required to conduct survey. Determines depth and nature of bottom by running lines of soundings, using electronic-sounding devices and bottom-sampling equipment while simultaneously fixing position of vessel, using electronic position-finding equipment and horizontal sextant angles of predetermined positions ashore. Locates position of rocks, reefs, shoals and aids to navigation, such as buoys and lighthouses. Plots data on field sheet by inking in depths, and bottom-contour lines, and transferring shore line and other topographical details from aerial photographs, topographical maps, and stadia surveys, using drawing instruments. Assists in the calibration of equipment. Takes soundings manually to determine depth and nature of bottom or shoal when closely-spaced soundings are required, using hand lead armed with tallow. Instructs trainees during on-the-job training.

2161-114 SURVEYOR (prof. & tech., n.e.c.) DPT:131 GED: 5 SVP: 7 EC: B 4 6 PA: L 2 4 5 6 7

Surveys earth's surface and oversees engineering survey parties engaged in determining exact location and measurement of points, elevations, lines, areas and contours of earth's surface to secure data used for construction, map making, land valuation and other purposes:

Determines information needed to conduct survey from notes, maps, deeds or other records. Surveys earth's surface, using survey instruments; such as, theodolites, transits, levels and chains, and

verifies accuracy of survey data by calculation. Calculates latitude, longitude, angles, areas and other information for map making from field notes secured by survey party. Keeps accurate records, notes and sketches of work performed or data obtained. Adjusts survey instruments to maintain accuracy or directs instrument man to adjust them. Prepares drawings, such as plot plans, contour drawings and cross sections for land usage planning. Directs activities of survey crew in surveying duties. Prepares land descriptions and plans, searches titles and survey records in survey and registry offices.

May conduct surface and underground surveys at coal or ore mines to control direction and extent of mining. May compute data necessary for driving and connecting underground passages, measure distance which shafts have advanced over set period, and calculate ore removed and broken ore remaining. May photograph topography of ground from air and prepare or revise topographical maps from such photographs, or use special high-accuracy techniques including astronomical observations. May specialize in a kind of survey work; such as, geodesy, topographical mapping, control surveys, geophysical surveys, town planning, supervision of industrial or governmental survey parties, and be designated accordingly; for example, County Surveyor
Dominion-Land Surveyor
Geodetic Computer
Mine Surveyor
Provincial-Land Surveyor
Topographic Surveyor

2161-118 INSTRUMENT MAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 7 EC: 0 2 3 6 PA: M 2 4 5 6 7

Obtains data pertaining to angles, deviations, points and contours used for construction, map making, mining or other purposes, using alidade, transit, level and other surveying instruments:
Compiles notes, sketches and records of data obtained and work performed by members of survey crew. Observes light and mirror signals from distant points to establish angles and elevations above datum plane, usually sea level, using distomat, geodimeter or tellurometer. Makes necessary calculations from data to establish location and elevation of surface features and plots information on maps being developed on plane table. Locates and marks sites selected for conducting geophysical prospecting activities concerned with locating subsurface earth formations. Makes or revises maps in the field from data gathered by means of plane table and alidade. May be concerned with one particular instrument or with one particular aspect of prospecting or surveying and be designated accordingly; for example,
Level Man
Lightkeeper, Triangulation
Plane-Table Man
Surveyor, Geophysical Prospecting(oil & nat. gas)
Transit Man

2161-122 SURVEYOR HELPER(prof. & tech., n.e.c.) DPT:567
GED: 3 SVP: 4 EC: B 2 3 6 PA: M 2 3 4 5 6 7

Helps surveyor as member of crew surveying land areas including underwater beds, by performing any combination of the following duties:
Cuts, marks, tags, and drives or embeds wooden, metal, or concrete stakes into ground to indicate grade settings, markers, or boundaries. Measures distances between survey points, as indicated by surveyor, using steel measuring tape or surveyor's chain. Marks measured point, using keel (marking crayon), paint sticks, tacks, or stakes. Holds level rod, stadia board, or range pole in vertical position at point indicated by surveyor to determine elevation. Moves rod, or target on rod, following hand or verbal signals from instrument man, to determine exact point or reading required. Calls out reading to note keeper or instrument man, or records it in notebook. Blazes (chips) trees to indicate approximate direction of survey line, and location of more accurate marker. Clears brush and debris from line of survey. Transports tools and supplies to work area. Performs inside work preparing equipment, making rough drawings, posting and indexing field books, and maintaining files. See also definition for term title, 02-160 HELPER (any ind.).
May be engaged in a particular task associated with helping surveyor

and survey crew, such as measuring horizontal distances with tape or chain, or holding graduated rod for elevations, and be designated accordingly; for example,
Axman
Chainman
Rodman
Stakeman

2163-DRAUGHTSMEN

This unit group includes occupations concerned with preparing drawings from designers' sketches and specifications for such purposes as manufacture and installation of machinery and equipment, or for construction of buildings, bridges, dams, roads and other civil engineering projects; preparing topographical, political, economic, nautical and other maps and charts; drawing technical manuals dealing with assembly, installation, operation, maintenance and repair of machinery and other equipment; and copying plans and drawings.

2163-110 DRAUGHTSMAN, GENERAL(prof. & tech., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares general assembly and detail drawings from sketches, specifications and notes, and discussion with designers, for manufacturing, construction and other projects by performing any combination of the following duties:
Studies preliminary sketches, makes calculations and analyzes data prior to producing preliminary drawings and makes any changes in consultation with designer. Selects scale for drawings and determines scaled dimensions, radii, point locations and other data. Prepares working plans for the development, manufacture, and installation of machinery and equipment, and of electrical and electronic circuitry. Completes design drawings, showing structural and mechanical features of docks, buildings, bridges, roads, dams and other architectural or civil engineering projects. Prepares drawings for a wide variety of products, including aircraft and ancillary equipment, marine structures and equipment, household appliances and other manufactured items. Reads catalogues and publications for suitable parts and materials.
May prepare bills of material, estimates of cost and charts of statistical data. May make field or shop trips to obtain measurements, restrictions, pertinent codes and applicable by-laws.

2163-114 CARTOGRAPHER(prof. & tech., n.e.c.) DPT:261
cartographic compiler; cartographic draughtsman;
cartographic technician.
GED: 4 SVP: 7 EC: 1 PA: S 4 6 7

Prepares and revises maps and charts of all types:
Compiles map manuscripts from aerial photographs, other maps, survey notes, records and reports, to portray hydrographic, cultural, relief and other types of features. Prepares reproduction material by scribing on acetate, images of original manuscript to produce final negatives in colour-separated form. Applies names of geographical features, municipalities and other particulars in appropriate positions on original drawing or separate type overlay. Examines final compositions to ensure completeness and accuracy. Occasionally accompanies crew in field to verify and complete map detail.

2163-118 DESIGN CHECKER(prof. & tech., n.e.c.) DPT:261
tool-drawing checker.
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Examines engineering drawings to correct errors in computing and recording dimensions and specifications:
Compares figures on production layout with drawing, examining angles, tolerances, bend allowance and dimensions, for accuracy. Determines suitability of design, materials, tooling and fabrication sequences, utilizing knowledge of draughting and methods of manufacture. Confers with design personnel to resolve design problems.

2163-122 DETAIL DRAUGHTSMAN(prof. & tech., n.e.c.)
DPT:261
detailer.
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares detail drawings for a specific part of machines, structures or products:

Studies general assembly drawings, prototype models and other data and makes calculations for preparation of detail parts drawings. Makes detail drawings showing dimensions and material to be used, and related data, for use in production department, utilizing knowledge of materials and manufacturing techniques. Advises production personnel on problems of interpreting drawings or sketches.

May confer with customers and make freehand sketches of approved drawings and designs. May be concerned with preparing detail drawings for a specific machine, structure or product and be designated accordingly; for example, Auto-Body Design Detailer(motor vehicle)

Detail Man, Furniture(furn.)

Drawing-Detail Man, Sheet Metal(struct., plate & ornam. metal)

2163-126 DRAUGHTSMAN, ARCHITECTURAL(prof. & tech., n.e.c.)
DPT:261
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares drawings showing internal, external or other architectural features of office blocks, residential structures, industrial, commercial and other buildings:

Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Prepares preliminary sketches showing proposed internal, external and other principal features, as directed by architect. Makes calculations to determine type and quality of materials required. Prepares working drawings showing plans, elevations, sections and typical details, for use on construction site, using a variety of draughting instruments.

May estimate quantities of materials required for project and compute costs.

2163-130 DRAUGHTSMAN, CIVIL(prof. & tech., n.e.c.)
DPT:261
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares drawings for the construction of structural, sanitary, transportation, hydrological and other civil engineering projects by performing any combination of the following duties:

Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Prepares plans for structures, using structural steel, such as bridge trusses, plate girders, roof trusses, trestle bridges and columns and other integral parts. Drafts diagrams of water, gas and sewage disposal systems for use of maintenance crews in diagnosing and locating causes of disturbances or failures. Develops plans for highways and auxiliary projects, such as roads, culverts and bridges from data received from field surveys. Drafts detailed drawings of wharfs, breakwaters, dikes and other hydrological structures. Prepares drawings showing profiles, cross-sections and right-of-way indicating relation of topographical contours and elevations to buildings, road, tunnels, mains and other civil engineering projects.

May be concerned with a particular aspect of civil-engineering draughting and be designated accordingly; for example, Designer, Highways

Structural-Steel Draughtsman

2163-134 DRAUGHTSMAN, COMMERCIAL(prof. & tech., n.e.c.)
DPT:261
office-layout designer.
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares office floor plans showing layout of furniture, equipment and movable partitions:

Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Plans office layouts according to customer's specifications. Draws plans to show efficient use of office space and desired decor. Prepares sketches showing location and type of furniture, equipment and movable partitions.

2163-138 DRAUGHTSMAN, ELECTRICAL(prof. & tech., n.e.c.)
DPT:261
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares drawings and wiring diagrams for the assembly, installation and maintenance of electrical equipment, and circuits, in industrial, commercial and residential establishments, and electrical distribution systems:

Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Prepares detailed layout drawings, wiring diagrams, schematic and system block diagrams from oral instructions, notes and sketches. Assists in the examination of structures and equipment requiring alterations and takes measurements and prepares sketches. Prepares diagrams of communications systems overlays. Prepares power-line relay-circuit diagrams for use in diagnosing and locating cause of line disturbances and failures.

May be concerned with preparation of electrical drawings and diagrams for vehicles, industrial machinery, domestic appliances and other manufactured appliances and be designated accordingly; for example,

Communications Draughtsman(elec. power)

Draughtsman, Relay(electric. equip.)

Marine Draughtsman, Electrical(ship & boat bldg.)

2163-142 DRAUGHTSMAN, ELECTRONIC(prof. & tech., n.e.c.)
DPT:261
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares diagrams and layout drawings used in manufacture, assembly, installation and repair of electronic equipment and electromechanisms:

Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Drafts layout and detail production drawings for a wide variety of manufactured products, such as televisions, radios, transmitters, amplifiers, computers and radiation detectors. Prepares detail drawings for relays, switches, indicators and other electronic components.

May conduct service and interference studies and prepare maps and charts related to radio and television surveys. May be concerned with a particular type of equipment and be designated accordingly, Draughtsman, Radio

2163-146 DRAUGHTSMAN, HEATING AND VENTILATING(prof. & tech., n.e.c.)
DPT:261
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares detail plans for the installation of heating, air-conditioning, ventilating and refrigeration systems and equipment:

Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Prepares detail drawings for installation of compressors, absorption units, evaporators and other components of air-conditioning, refrigeration, heating and ventilating systems.

May calculate heat loss and gain, for buildings, to assist in determining equipment specifications, using slide rule and following standard procedures for making these calculations. May be concerned with a particular system and be designated accordingly; for example, Draughtsman, Air-Conditioning Systems

Draughtsman, Refrigeration Systems

2163-150 DRAUGHTSMAN, MARINE(prof. & tech., n.e.c.)
DPT:261
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Prepares drawings of structural and mechanical features of ships and other equipment:

Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Prepares drawings of horizontal and longitudinal cross sections, deck plans, transverse bulkheads, rigging details, cargo boom and fittings, watertight doors, stern frame and rudder arrangements and ventilation shaft, using knowledge of various types of ships, including principal dimensions, lines, beam members and structural details. Prepares calculations and design data necessary for developing layouts, rigging arrangements and structural details. Compiles itemized lists of materials and specifications from drawings. Examines detailed listings of all spare gear and equipment installed for conformance to client's specifications. Assists on sea trials,

equipment tests and other experiments. Revises design information and keeps drawings up-to-date.
May be concerned with one particular aspect of marine draughting and be designated accordingly; for example,
Draughtsman, Hull(ship & boat bldg.)
Draughtsman, Hydraulic Machinery(ship & boat bldg.)
Draughtsman, Ship Detail(ship & boat bldg.)

2163-154 DRAUGHTSMAN, MECHANICAL(prof. & tech., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I PA: S 4 5 6 7

Prepares drawings of industrial machines, machine parts, engines, tools and other mechanical equipment:
Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Drafts general assembly and detail drawings of gears, levers, pulleys and reduction gears indicating dimensions and tolerance, fasteners and joining requirements and other engineering data. Prepares working drawings showing methods of manufacture, joining and fastening, utilizing knowledge of machine shop practices.
May be concerned with drawing machine parts, cutting and forming tools, jigs and fixtures and be designated accordingly,
Draughtsman, Tool Design

2163-158 DRAUGHTSMAN, MINE(prof. & tech., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I PA: S 4 5 6 7

Prepares drawings of mine machinery of structural features of mines:
Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Prepares drawings of mine machinery such as conveyors and hoists from general design notes prepared by mining engineer. Makes graphic diagrams, profiles and cross-sections to show geological stratigraphy and location of mineral deposits from notes prepared by geologist or surveyor.

2163-162 DRAUGHTSMAN, ONE-TENTH SCALE(ship & boat bldg.) DPT:261
monopol draughtsman; optical draughtsman.
GED: 4 SVP: 7 EC: I PA: S 4 5 6 7

Prepares reduced scale drawings of ships' plate sections, requiring extremely precise draughtsmanship, to be used as a guide to automatic flame cutting machines:
Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Studies table of off-sets and drawings of hull and deck plates prior to developing lay-out sheet. Draws lay-out sheet to one-tenth scale showing front, side and plan views of plates. Prepares negative (black on white) drawing of plate section from lay-out sheet. Marks in size, plate and section number and other identifying information. Photographs negative drawing and prepares photographic plate to be used in monopol machine that cuts out ships plate sections from steel stock plates.

2163-164 DRAUGHTSMAN, PETROLEUM EXPLORATION(prof. & tech., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I PA: S 4 5 6 7

Prepares maps, diagrams, profiles and cross-sections used in petroleum explorations:
Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Draws sub-surface contours and cross-sections of rock formations, location of oil and gas deposits from data obtained by geophysical prospecting parties, utilizing special symbols. Plots boreholes of gas or oil wells from photographic sub-surface survey recordings and other data. Computes and represents diameter, depth, degree and direction of inclination, location of equipment and other dimensions and characteristics of boreholes. Plots maps and diagrams from computations based on recordings of seismograph, gravity meter, magnetometer and other petroleum prospecting instruments and prospecting and survey field notes.
May be concerned with one aspect of petroleum exploration draughting and be designated accordingly; for example,
Draughtsman, Directional Survey(oil & nat. gas)
Draughtsman, Geological
Draughtsman, Geophysical

2163-168 DRAUGHTSMAN, PIPE ORGAN(prof. & tech., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I PA: S 4 5 6 7

Prepares working plans and detailed drawings of pipe organs and determines number and position of organ stops:
Performs duties similar to those of 2163-110 DRAUGHTSMAN, GENERAL (prof. & tech., n.e.c.). Studies and analyzes sketches, drawings and photographs to determine space available for erection of pipe organ. Computes floor space, depth and height available from information supplied by sales representatives. Determines number of organ stops that can be installed considering dimensions of proposed organ and customer's requirements. Adjusts and amends sketches as required. Analyzes operational data to establish performance standards.

2163-172 EDITOR, MAP(prof. & tech., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I PA: L 47

Verifies accuracy and completeness of draft map from mounted photographs and other data:
Views photographs through stereoscope and examines corresponding area of manuscript to verify correct identification of specified topographical features and accuracy of contour lines. Verifies correct location and accuracy of scales, distances between control points and reference lines, using slide rule, dividers and scale tables. Examines mosaic or composite picture to detect omission of topographical features, double images, poor registration and other defects in photography or draughtsmanship and marks observations, using specified symbols. Marks errors, and makes corrections on numbering of grid lines, and letters names of rivers or towns and other data. Advises cartographic draughtsman concerning changes to be made on maps. Examines work order from client and compares data with manuscripts and photographs to ensure that area photographed has been completely covered.
May travel over photographed area to observe and record cultural and drainage features not shown on photograph. May verify number and class of roads, and highways, township and country boundaries.

2163-176 TECHNICAL ILLUSTRATOR(prof. & tech., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: I PA: S 4 7

Lays out and draws illustrations for reproduction in reference books, technical manuals and other publications dealing with assembly, installation, operation, maintenance and repair of machines, tools and equipment:
Prepares illustrations from drawings, designs, mock-ups and photoprints utilizing methods and techniques suitable for processing by photo-offset, projection transparencies or other reproduction processes, using a variety of draughting and optical equipment. Lays out and draws schematic, perspective, orthographic or oblique-angle views to depict function, relationship and assembly sequence of parts and assemblies, such as gears, engines and instruments. Shades or colours drawings to emphasize details or to eliminate undesired background, using ink, crayon, airbrush and overlays. Pastes instructions or comments in position on drawing.
May draw cartoons and caricatures to illustrate operation, maintenance, safety manuals and posters. May supervise production of displays and exhibits or of promotional literature and other graphics.

2163-178 TRACER(prof. & tech., n.e.c.) DPT:581
GED: 3 SVP: 4 EC: I PA: S 4 5 6 7

Copies plans and drawings prepared by draughtsmen, using a variety of draughting instruments:
Traces drawing or plans by placing transparent paper over the drawing, using pens, pencils, triangles, T-squares, lettering guides and other draughting instruments. Drafts office forms, charts and simple detail drawings from sketches. Files maps, sketches and drawings to facilitate retrieval of data.

2163-199 OTHER DRAUGHTSMEN

This group includes draughtsmen, not elsewhere classified, for example, those who prepare drawings for injection moulds, cable layouts and special tools and equipment. Typical examples of occupational titles covered by this residual-group definition are:

Draughtsman, Cable Layout(telecom.)
Draughtsman, Mould Injection(prof. & tech., n.e.c.)

2165-ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS

This unit group includes occupations, as described under master titles, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.) and 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.), concerned with carrying out technological and technical functions in an engineering specialization; such as, chemical, civil, electrical, industrial, mechanical metallurgical, mining, petroleum, aeronautical and nuclear engineering, or in architecture, using a knowledge of architectural, engineering, scientific, mathematical and draughting design principles and practises. Physical science technologists and technicians are classified in Unit Group 2117. Technologists and technicians in the field of medicine and health are classified in Minor Group 315, OTHER OCCUPATIONS IN MEDICINE AND HEALTH. Life science technologists and technicians are classified in Unit Group 2135, LIFE SCIENCES TECHNOLOGISTS AND TECHNICIANS.

Architectural and Engineering Technologists

2165-110 through 2165-199

2165-110 AEROSPACE-ENGINEERING

TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: 1 PA: L 4 5 6 7

Performs technological functions in various aspects of aerospace engineering, primarily in support of research, design and development:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Conducts aerodynamic and thermodynamic tests of aircraft models in wind-tunnels, maintaining precise control over test conditions. Tests physical properties of raw materials and strength of bonded or welded aircraft parts to determine conformity to specifications, using measuring and recording equipment. Conducts metallographic tests and photomicrography, and interprets micro-structures. Plots stress-strain curve on graph paper and converts data, using trigonometric formulae and tables to determine such factors as tensile strength, yield and torque. Compares test results with specified standards and writes reports. Reviews quality and performance problems with engineers to determine corrective action. Designs tools, dies and fixtures necessary to fabricate or modify one-of-a-kind research or development devices. May be concerned with a particular aspect of aerospace technology and be designated accordingly; for example,
Testing-Laboratory Technologist(air & space-craft)
Vendor-Quality Technologist(air & space-craft)
Wind-Tunnel-Test Technologist

2165-114 ARCHITECTURAL TECHNOLOGIST(prof. & tech., n.e.c.)

DPT:231

GED: 5 SVP: 7 EC: 1 PA: S 4 5 6 7

Performs technological functions in various aspects of architecture, primarily in support of design, development, estimation and site supervision:

Implements architect's design concept with a responsible analysis of its technical implications by means of clear, concise drawings and detailed instructions. Prepares cost and work-completion estimates to support contract bids, utilizing a knowledge of building construction methods, labour costs and ranges of materials. Represents building architect on construction site to ensure compliance with design specifications and maintenance of desired standards of material and workmanship. Consults with architect or contractor on standards of work and deviations from original design. Transmits instructions to

site manager or contractor concerning work necessary to remedy defect discovered and advise him of any queries arising from changed specifications. See also definition for term title, 01-0420 TECHNOLOGIST (prof. & tech., n.e.c.).

May be concerned with a particular aspect of architectural technology and be designated accordingly; for example,

Architectural Assistant
Clerk of Works
Estimator
Inspector of Plans(gov. serv.)
Quantity Surveyor

2165-118 CHEMICAL-ENGINEERING

TECHNOLOGIST(prof. & tech., n.e.c.)

231

GED: 5 SVP: 7 EC: 1 6 7 PA: L 4 5 6 7

Performs technological functions in various aspects of chemical engineering, excluding petrochemical engineering, primarily in support of research, design and development:

Performs duties as described under master title 01-080, ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Designs and constructs prototypes, test equipment and apparatus for chemical engineering processes. Evaluates technical and economic feasibility of modifying existing chemical-engineering equipment in plant, or replacing it with new equipment. Verifies instrument accuracy by calibrating instrument against known standard. Supervises routine quality control operations.

May be concerned with a particular aspect of chemical-engineering technology and be designated accordingly; for example,

Chemical-Instrumentation Technologist
Chemical-Process Technologist(chem., n.e.c.)
Product-Evaluation Technologist(chem., n.e.c.)
Quality-Control Technologist(chem., n.e.c.)

2165-122 CIVIL-ENGINEERING TECHNOLOGIST(prof. & tech., n.e.c.)

DPT: 231

GED: 5 SVP: 7 EC: B PA: L 4 5 6 7

Performs technological functions in various aspects of civil engineering, primarily in support of research, design and development:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Conducts materials testing in research and development laboratories, and writes reports. Undertakes traffic surveys, analyzes results and prepares statistical data, tables and drawings. Conducts field and laboratory tests of soils, and prepares technical reports. Assists in recommending design parameters to engineers in other disciplines. Conducts inspections of dams, power plants, generating plants and other structures to determine need for maintenance and repair work.

May be concerned with a particular aspect of civil-engineering technology and be designated accordingly; for example,

Building Inspector
Civil-Engineering-Design Technologist
Materials-Testing Technologist
Power-Plant-Inspection Technologist(elec. power)
Soils-Testing Technologist
Traffic Technologist

2165-126 ELECTRICAL-ENGINEERING

TECHNOLOGIST(prof. & tech., n.e.c.)

DPT:231

GED: 5 SVP: 7 EC: B 6 PA: L 4 5 6 7

Performs technological functions in various aspects of electrical engineering, primarily in support of research, development and design:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Assists with design, and draws equipment installation and distribution layouts and profile drawings for transmission lines, underground stations and other distribution facilities. Makes sag and tension calculations, sag templates and profile drawings for erection of transmission towers and lines; makes periodic inspections of construction and provides technical advice to contractor's supervisors. Compiles data to be analyzed by digital computer to assist in operation of power network. Analyzes technical and statistical records of unit costs for generating and distributing stations. Modifies new electrical equipment to correct functional deviations, under direction of electrical engineer. Provides technical advice to promote good

lighting practices, and makes surveys to determine lighting requirements.

May be concerned with a particular aspect of electrical-engineering technology and be designated accordingly; for example
Distribution-Planning Technologist(elec. power)

Lighting Designer

Transmission-Engineering Technologist(elec. power)

Underground-Distribution Technologist(elec. power)

2165-130 ELECTRONIC-ENGINEERING

TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: I 6 PA: L 4 5 6 7

Performs technological functions in various aspects of electronic engineering, primarily in support of research, design and development:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Determines circuit-layout utilizing mathematical calculations and knowledge of electronic theory for new or modified radio equipment, telemetering systems and other electronic devices and components. Designs signal circuits to accommodate railway traffic on existing track layout and develops program circuits, crossing signals, switches and centralized traffic control boards. Constructs prototypes from approved sketches or drawings, installs circuitry and verifies calibrations of circuitry, using test apparatus, such as voltmeters and bridges. Evaluates performance and reliability of prototypes or production models of electronic equipment and recommends necessary changes to engineering staff. Devises and modifies electronic instrumentation and apparatus used to test and evaluate experimental electronic, electromechanical and electrohydraulic systems and equipment.

May be concerned with a particular phase of electronic-engineering technology and be designated accordingly; for example,

Aircraft-Electronics Technologist(air & space-craft)

Circuit Designer(rail trans.)

Development Technologist(telecom.)

Electronic-Prototype Technologist(electronic equip.)

2165-134 INDUSTRIAL-ENGINEERING

TECHNOLOGIST(prof. & tech., n.e.c.) DPT: 231

GED: 5 SVP: 7 EC: I PA: L 4 5 6 7

Performs technological functions in various aspects of industrial engineering, primarily in support of operations research:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Analyzes specifications and prepares audit-requirements for raw materials, sub-assemblies or assemblies to meet production requirements. Analyzes such production problems as scarcity of components, materials or personnel. Determines and verifies quality and reliability of product, during initial production stages, considering such factors as time, cost and quality control standards.

May be concerned with a particular aspect of industrial-engineering technology and be designated accordingly; for example,

Operations-Research Technologist

Production-Control Technologist

Quality-Control Technologist

Time-Study Technologist

2165-138 MARINE-ENGINEERING TECHNOLOGIST(prof.

& tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: B 6 PA: L 4 5 6 7

Performs technological functions in various aspects of marine engineering, primarily in support of design and development:

Performs duties as described under master title, 01-080, ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Calculates stresses and strains on hull and structural members, and prepares related working drawings. Prepares detailed specifications of ship's machinery and equipment. Co-operates with contractors and regulatory boards to ensure that construction, alterations, modifications or repairs are kept at minimum cost consistent with safety. Determines necessary weight and position of ballast prior to launching. Investigates recurring machinery failures to determine design deficiencies and recommends modifications or repairs are kept at minimum cost consistent with safety.

May be concerned with a particular aspect of marine-engineering technology and be designated accordingly,

Hull-Ballast-Calculation Technologist(ship & boat bldg.)

2165-142 MECHANICAL-ENGINEERING

TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: I 6 PA: S 4 5 6 7

Performs technological functions in various aspects of mechanical engineering, primarily in support of design and development:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Analyzes engineering sketches, specifications and related data and drawings to determine shape, dimensions, tolerances, type, hardness and machining properties of metal, and other design factors in the development of industrial engineering equipment, processes and products. Examines feasibility of using one or more machines to carry out sequential operations. Compiles and analyzes data to determine effect of design on machine or product in relation to temperature, pressure, speed, fuel consumption, horsepower and other factors. Drafts working drawings or detailed multi-view drawings of equipment, sub-assemblies or product, using engineering data and standard references, showing direction of any moving parts. Determines tools, fixtures and equipment to be used in fabrication and assembly of mechanical components and complete assemblies. Examines project instructions and drawings to determine test specifications, procedures, objectives, test equipment and problems involved in re-designing, changing or re-arranging material, parts of sub-assemblies.

May be concerned with a particular aspect of mechanical engineering technology and be designated accordingly; for example,

Designer, Mechanical-Engineering Equipment

Development Technologist, Mechanical Engineering.

Engineering-Assistant, Mechanical Equipment

2165-146 METALLURGICAL-ENGINEERING

TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: I 4 5 6 7 PA: L 4 7

Performs technological functions in various aspects of metallurgical engineering, primarily in support of research, design and development:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Tests for presence and concentration of specified elements in metal ore samples, by titration, filtration, colorimetric analysis and spectrophotometry, which would render commercial refining and production impractical. Sets up pilot-plant to analyze roasting, sintering, smelting, electrolytic and other processes for improvement of production methods. Reviews all designs, where welding is involved to ensure that it meets metallurgical specifications. Determines welding procedures for complex or unconventional weldments, utilizing a knowledge of mathematics and physical properties of metals. Acts as technical advisor on all matters relating to suitability, reliability and weldability of steel.

May be concerned with a particular aspect of metallurgical technology and be designated accordingly; for example,

Control Analyst, Metallurgical

Technical Advisor, Welding

Technologist, Production Research, Metallurgical

2165-150 MINING-ENGINEERING TECHNOLOGIST(prof.

& tech., n.e.c.) DPT:231

GED: 5 SVP: 7 EC: B 6 7 PA: L 4 5 6 7

Performs technological functions in various aspects of mining engineering, primarily in support of design and development:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Assists in underground and surface-mining activities; such as, planning and surveying, stope development, developing improved production-drilling techniques, mine ventilation layout, ore-dressing metallurgy and metal refining.

May be concerned with a particular aspect of mining-engineering technology and be designated accordingly,

Mine-Development Technologist

2165-154 NUCLEAR-ENGINEERING TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: I 6 PA: L 4 6 7

Performs technological functions in various aspects of nuclear engineering, primarily in support of research:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Sets up and controls operation of nuclear reactor in which neutrons and gamma rays are used to study structure of atoms to determine properties of materials, and create radio-isotopes and radio-active fission products for research purposes. Compiles lists of events (collisions of atomic nuclei) from photographs of cloud chambers, or other particle detectors, and operates machine to record on magnetic tape or punch cards characteristics of events to extend knowledge of atomic and sub-atomic particles. Operates particle accelerator to accelerate and hurl protons (hydrogen nuclei) and other ions into target atoms of various elements, in numbers and at energies specified by engineers or scientists.

May be concerned with a particular aspect of nuclear engineering technology and be designated accordingly; for example,

Accelerator Technologist
Radio-Isotope-Production Technologist
Scanner
Test-Reactor Technologist

2165-158 PETROCHEMICAL-ENGINEERING TECHNOLOGIST(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: I 6 7 PA: M 4 6 7

Performs technological functions in various aspects of petrochemistry and petrochemical engineering, primarily in support of research, development and operation:

Performs duties as described under master title, 01-080 ENGINEERING TECHNOLOGIST (prof. & tech., n.e.c.). Conducts chemical and physical laboratory tests and analyses on gasoline, fuel oil, asphalt and other petrochemicals to determine composition, strength, flash point and other characteristics, for development of new or improved products. Analyzes crude-oil samples from various oil fields, using fractional-distillation equipment to determine processing requirements. Operates motors and pumps by adjusting valves to control and regulate temperature, pressure and rate of flow of petrochemical products through processing units, according to specification. Tests engines to determine behaviour of fuels and lubricants under simulated operating conditions. Dismantles test engine, after test run, and inspects valves, pistons, valve lifter, rings and rods for wear and deposits, using microscope and precision weighing and measuring instruments.

May be concerned with a particular aspect of petrochemistry or petrochemical-engineering technology and be designated accordingly; for example,

Petrochemical-Laboratory Technologist
Pilot-Plant Technologist(petrol. & coal prod.)
Research Technologist, Petroleum(petrol. & coal prod.)
Test-Engine Evaluator

2165-199 OTHER ARCHITECTURAL AND ENGINEERING TECHNOLOGISTS

This group includes architectural and engineering technologists, not elsewhere classified; for example, those who perform technological functions in various architectural and engineering disciplines in such fields as ceramics, forestry and cryogenics. Typical examples of occupational titles covered by this residual group definition are:

Cryogenic-Engineering Technologist (prof. & tech., n.e.c.)
Forest-Engineering Technologist (prof. & tech., n.e.c.)

Engineering Technicians
2165-210 through 2165-299

2165-210 AEROSPACE-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: I 5 PA: M 2 4 5 6 7

Performs technical functions in various aspects of aerospace engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070

ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Sets up wind-tunnel tests of aircraft models and other equipment for collection of aerodynamic and thermodynamic data. Maintains wind-tunnel equipment and oversees repair of components by outside contractors. Sets up and operates equipment to test experimental aircraft-metal parts. Assists in quality control inspection on production aircraft engines, parts, airframes and ancillary equipment. Repairs, tests and adjusts precision electro-mechanical instruments, such as temperature and aerodynamic probes, following mechanical drawings and specifications, using precision hand and power tools and testing instruments.

May train customer personnel on technical operation, maintenance and overhaul of aircraft. May be concerned with a particular technical aspect of aerospace-engineering activity and be designated accordingly; for example,

Electromechanical Technician(air & space-craft)
Field-Service Representative(air & space-craft)
Laboratory-Test Technician(air & space-craft)
Quality-Control Technician(air & space-craft)
Wind-Tunnel-Test Technician

2165-214 AGRICULTURAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: I PA: S 4 6 7

Performs technical functions in various aspects of agricultural engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Assists in programs to mechanize field crop experiments. Aids in design and development of laboratory apparatus and specialized field equipment; such as, plot harvesters, threshers, sprayers and seeders by preparing detailed specifications from engineering drawings, and constructs prototype equipment. Conducts evaluation tests of experimental field equipment.

2165-218 CHEMICAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: I 6 7 PA: L 4 5 6 7

Performs technical functions in various aspects of chemical engineering, excluding petrochemical engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Modifies or replaces equipment, as directed, following feasibility studies conducted by technologists and engineers. Assists in calibration or modification of instruments used in chemical engineering processes. Undertakes routine testing of chemical processing equipment, and of material being processed.

May be concerned with a particular technical aspect in support of chemical engineering and be designated accordingly; for example,
Chemical-Laboratory Technician
Chemical-Instrument Technician(chem., n.e.c.)

2165-222 CIVIL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: B PA: L 4 5 6 7

Performs technical functions in various aspects of civil engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Makes routine computations and cost estimates, and assists in preparation of engineering drawings for buildings, bridges and structures. Conducts field and laboratory tests of construction materials, takes soil samples, summarizes data and writes reports for construction and maintenance of highways, railways, waterways and other civil engineering projects. Collects data for traffic volume studies, using electric timing devices and counters, stop watches and radar. Summarizes information from maps, reports, field investigations and books for urban planning studies. Prepares, operates and maintains field experiment and sampling stations for air-pollution monitoring; processes air and other source samples to determine level of pollution, and reports findings to regulatory agencies.

May be concerned with air-pollution control in an industrial

establishment. May be concerned with a particular technical aspect in support of civil engineering and be designated accordingly; for example,

Air-Pollution, Field Technician
Highway Technician
Materials-Testing Technician
Railway Technician
Smoke Tester(iron & steel)
Structural-Engineering Technician
Traffic Technician

2165-226 ELECTRICAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: 1 6 PA: L 4 5 6 7

Performs technical functions in various aspects of electrical engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Maintains power-generation and distribution equipment, and tests water and coal used in boilers, and oil used in circuit breakers and as a lubricant in generators. Assembles prototypes or final assemblies of protected relays and metering and indicating devices and other electrical equipment, using hand and power tools and test equipment. Assembles, installs, tests and calibrates electrical-testing equipment. Assists corrosion engineers with problems related to measuring static electricity discharge between gas pipeline and ground. Makes recommendations to correct or improve lighting arrangements.

May be concerned with a particular technical aspect in support of electrical engineering activity and be designated accordingly; for example,

Corrosion-Control Technician(elec. power)
Electrical-Instrument Technician
Home-Lighting Technician(elec. power)
Power-System Technician(elec. power)

2165-230 ELECTRONIC-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: 1 6 PA: L 4 5 6 7

Performs technical functions in various aspects of electronic engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Assembles circuitry for electronic equipment in accordance with engineering instructions and technical manuals. Dismantles various types of electronic instruments and equipment and replaces defective components and parts, using hand tools and other precision tools. Calibrates electronic measuring and indicating instruments to established standards. Inspects equipment installed in aircraft, ships and other structures to rectify any operating problems. Installs, tests and repairs electromedical equipment, following technical manuals and using electronic test equipment and hand tools.

May be concerned with a particular technical aspect of electronic engineering and be designated accordingly; for example,

Calibration Technician
Electromedical-Equipment Technician (scient. & ind. equip., n.e.c.)
Electronic Mechanic, Field
Inspection Technician, Electronics
Test-Equipment Technician (electronic equip.)

2165-234 GEOLOGICAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: B 2 3 6 PA: L 4 5 6 7

Performs technical functions in various phases of geological engineering in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Prepares organizational details for surveys, in conjunction with engineers and geologists. Collects information by operating magnetometers, electromagnetic units and other instruments. Participates in field mapping, surveying, camp organization and other field activities. Prepares maps from field notes of geological or geophysical nature. Assists in preparation of feasibility studies and interpretation of field surveys. Prepares specimens for study by grinding rock samples and

performing routine chemical analyses. Assists in collecting specimens by operating diamond drilling machines which produce core samples. Calibrates instruments magnetometers and other electro-magnetic instruments.

May be concerned with a particular technical aspect in support of geological engineering and be designated accordingly; for example,

Diamond-Drilling Technician
Geological-Instrument-Operations Technician
Geological-Mapping Technician
Geological-Survey Technician
Research-and-Development Technician, Geological Engineering

2165-238 INDUSTRIAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: 1 PA: L 4 5 6 7

Performs technical functions in various aspects of industrial engineering, primarily in support of operation, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Conducts time-and-motion studies to evaluate production and worker efficiency. Studies material- handling methods and suggests changes which will reduce physical effort, increase safety and reduce handling costs. Measures and studies available floor space and draws plans of efficient plant layout to scale, using draughting instruments. Assists in developing tests for components and finished products to ensure that product meets quality standards and operating requirements. Plans assignments and makes recommendations based on worker performance, machine capacity and production schedules. Aids in surveillance of all inventories from raw materials to finished products, and prepares necessary status reports.

May confer with union stewards, production workers and time-study technicians to review disputes and resolve pay and pay-rate problems. May be concerned with a particular technical aspect in support of industrial engineering and be designated accordingly; for example,

Inspector, Set-Up and Lay-Out
Inventory-Control Technician
Materials-Handling Technician
Plant-Layout Technician
Production-Planning Technician
Quality-Control Technician
Time-and-Motion Technician
Union-Time-Study Representative.

2165-242 MARINE-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: B 6 PA: L 2 4 5 6 7

Performs technical functions in various phases of marine engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Carries out installation, repair and maintenance activities concerned with mechanical equipment aboard ships to ensure efficient operation in conformance with government operating and safety regulations. Inspects repair work done under contract to ensure compliance with specifications. Maintains records of repair work performed on each vessel and prepares reports for management.

May be concerned with a particular technical aspect of marine engineering activity and be designated accordingly,

Technician, Ship Repair(ship & boat bldg.)

2165-246 MECHANICAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: 1 6 PA: M 3 4 5 6 7

Performs technical functions in various aspects of mechanical engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Develops specifications for non-standard instrumentation apparatus according to engineering data, characteristics of equipment and capabilities of procurable test apparatus. Selects, installs, calibrates and checks out sensing, telemetering and recording instrumentation and circuitry to control plant processes. Operates instrumentation test apparatus to produce, regulate and record effects of actual or simulated conditions;

such as, vibration, stress, temperature, humidity, pressure, altitude and acceleration in testing of mechanical components and sub-assemblies. Assembles or installs new or modified mechanical components or assemblies for industrial or power equipment, machine tools, measuring and control instruments. Designs and makes metalworking dies, cutting tools, jigs and fixtures, using milling machines, lathes, shapers and other metalworking machines, and inspects finished dies for conformance to original model or drawing, using calipers, micrometers and other measuring devices.

May be concerned with a particular technical aspect of mechanical engineering and be designated accordingly; for example,
Engineering Checker
Equipment-Development Technician
Tool-Planning-Liaison Man

2165-250 METALLURGICAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: I 4 5 6 7 PA: L 4 7

Performs technical functions in various aspects of metallurgical engineering, primarily in support of operation, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Conducts shear, hardness, tensile, impact, compression, fatigue and other tests to determine physical properties of refined metal specimens. Conducts tests on foundry sands to determine moisture, permeability, clay content and bond strength for suitability in moulding and casting operations. Determines temperature of molten metal during rolling mill process, using optical or thermocouple pyrometers, to maintain standards for grade of steel plate required. Calculates charges for foundry furnaces, checks quality of metal while undergoing heat treatment and performs chemical analysis of alloys. Checks calibration of pyrometers and other test equipment.

May be concerned with a particular aspect in support of metallurgical engineering and be designated accordingly; for example,
Foundry-Laboratory Technician
Heat-Treat Technician
Materials-Testing Technician(iron & steel)
Metallurgical-Laboratory Technician

2165-254 MINING-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: B 6 7 PA: L 4 5 6 7

Performs technical functions in various aspects of mining engineering, primarily in support of operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Performs routine maintenance on underground drilling machines, mine engines, cars and other underground mine equipment. Investigates operation of underground mine equipment to improve methods and reduce costs, and recommends replacement, if necessary. Operates equipment to obtain ore samples from drill cores or stope face for quality and quantity testing.

May be concerned with a particular technical aspect of mining engineering activities and be designated accordingly,
Mine-Production Technician

2165-258 NUCLEAR-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: I 6 PA: L 4 6 7

Performs technical functions in various aspects of nuclear engineering, primarily in support of operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Computes radiation time and dosage, and gamma intensities required at various distances from grid, using standard formulae, conversion tables and slide rule, and submits data to supervisor for review, prior to operation of nuclear reactor. Inserts capsules of materials to be irradiated into tubes leading to reactor core, using extension tool. Adjusts controls, under supervision, to start and shut down nuclear reactor and regulate flux level, reactor period, coolant temperature, rate of flow, rod positions and other control elements that affect power level within the nuclear reactor. Controls laboratory equipment to prepare radio-isotopes and other radio-active materials for use as tracers in

biological, biochemical, physiological and industrial research. Controls slave manipulators from outside cell to perform a variety of machining operations, chemical and metallurgical tests and decontamination procedures, using cleaning agents and chemical solutions. Controls distillation towers and associated equipment to process spent nuclear fuels and recover unconsumed uranium.

May be concerned with a particular technical aspect in support of nuclear engineering and be designated accordingly; for example,

Control-Room Operator, Nuclear
Fuel-Handling Operator, Nuclear
Gamma-Facilities Operator
Heavy-Water-Reconcentration Operator
Hot-Cell Technician, Nuclear

2165-262 PETROCHEMICAL-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: I 6 7 PA: M 4 6 7

Performs technical functions in various aspects of petrochemistry and petrochemical engineering, primarily in support of installation, operation, maintenance, production and quality control:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Performs routine quality control testing of crude and blended oils, gases, asphalt and pressure distillates to determine boiling point, condensation, flash point, viscosity, specific gravity and other characteristics, using distillation apparatus, analytical scales and other laboratory equipment. Compares colour of liquid petrochemical products with charts, to determine processing factors measurable by colour, and reports results to supervisor. Operates test engine to determine behaviour of fuels and lubricants, and whether they meet specifications. Maintains and overhauls laboratory knock-testing engines and other petrochemical processing equipment.

May be concerned with a particular aspect of petrochemistry and petrochemical engineering and be designated accordingly; for example,
Fuel Technician
Gas Chromatographer(petrol. & coal prod.)
Laboratory Technician, Octane(petrol. & coal prod.)
Test-Engine Technician

2165-266 PETROLEUM-ENGINEERING TECHNICIAN(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: B 7 PA: L 4 7

Performs technical functions in various aspects of petroleum engineering primarily in support of operation, maintenance and production:

Performs duties as described under master title, 01-070 ENGINEERING TECHNICIAN (prof. & tech., n.e.c.). Directs workers in assembling mechanical and electrical-testing instruments and equipment, at well site, to measure and record pressures and temperatures at various depths. Analyzes mud circulated through boreholes during drilling operations. Removes chart recordings from pressure and temperature instruments and makes preliminary interpretations of data for use by engineering personnel in determining rate of natural flow from well. Keeps records of depth and formation tests and calculates consistency of mud required to maintain optimum drilling conditions. Calibrates and repairs recording instruments.

May be concerned with a particular technical aspect in support of petroleum engineering, and be designated accordingly; for example,
Technical Operator, Petroleum Drilling(oil & nat. gas)
Well-Logging Operator, Mud Analysis(oil & nat. gas)

2165-299 OTHER ENGINEERING TECHNICIANS

This group includes engineering technicians, not elsewhere classified; for example, those who perform technical functions in various engineering disciplines in such fields as ceramics, cryogenics and forestry. Typical examples of occupational titles covered by this residual group definition are:

Ceramic-Engineering Technician(prof. & tech., n.e.c.)
Wood Technician(prof. & tech., n.e.c.)

**2169-OTHER OCCUPATIONS IN ARCHITECTURE
AND ENGINEERING, N.E.C.**

This unit group includes occupations, not elsewhere classified, concerned with planning and conducting aerial photographic surveys; analyzing aerial photographs to prepare or revise maps and charts; preparing maps, graphs and charts for transit companies; and designing and lettering forms for commercial, industrial and government organizations.

2169-110 PHOTOGRAMMETRIST(prof. & tech., n.e.c.)

DPT:131

GED: 5 SVP: 7 EC: B PA: L 4 7

Plans aerial surveys, and co-ordinates preparation of topographical maps, charts and related material from aerial photographs and other data:

Examines and interprets aerial photographs to determine topographic mapping control points, prepare aerial-photograph mosaics, and provides data for hydrology and drainage studies. Applies standard mathematical formulas and photogrammetric techniques to identify, scale and orient geodetic points, elevations and other planimetric or topographic features and cartographic detail. Supervises establishment of base lines by ground survey. Determines type of camera to be used and flight altitude of camera-carrying aircraft. Calculates time between camera shots to ensure proper overlapping of exposures and spacing of flight lines (routes travelled by aircraft). Provides technical direction concerning processing and reproduction of topographical maps and charts and other survey data. Prepares charts and tables required for aerial navigation over land or water. Computes geodetic measurements and interprets survey data to determine position, shape, elevation of geomorphic and topographic features on earth's surface, from ground and aerial photographs or mosaics.

May give instruction to aerial photographers responsible for operating aerial cameras.

2169-114 AERIAL-PHOTOGRAPH ANALYST(prof. & tech., n.e.c.)

DPT:287

aerial-photograph interpreter.

GED: 5 SVP: 6 EC: I PA: L 4 7

Analyzes aerial photographs to ascertain significant industrial or topographical data:

Studies aerial photographs to locate roads, rivers, industrial centers, wooded areas and other features, using desk mounted stereoscopic equipment, to determine nature of terrain. Assesses data obtained by airborne electronic sensors that provide infra-red information to ascertain thermal data of water and land. Utilizes data obtained from radar studies to locate and identify features. Combines these data with other photographic data and prepares preliminary assessment reports. May compare previously prepared maps with data extracted from photographs to determine accuracy of maps.

May plan photographic programs to obtain most suitable data for planned application.

2169-118 STEREOPLOTTER(prof. & tech., n.e.c.) DPT:281

GED: 4 SVP: 7 EC: I PA: L 4 7

Plots scaled topographic and planimetric maps, and records cross-section and profile data from aerial-survey photographs, using stereoplotting equipment:

Analyzes aerial survey photographs, using stereoplotting instruments. Determines proper orientation and control of stereoplotting equipment, using plans, profiles and field survey notes. Sets up stereoplotting instruments and makes adjustments so that image from one photograph is seen by one eye and image from the other is seen by other eye. Views screen through coloured lenses arranged so that each lens permits view of image only in opposing colour, enabling operator to view three-dimensional image. Determines contour interval and vertical scale of image, using mathematical table. Interprets colours and topographical details to produce maps, controlling pencil point through stereoscope. Determines cross-section elevations, and records data through programed electronic read-out units.

2169-122 MOSAICER(prof. & tech., n.e.c.) DPT:381

GED: 4 SVP: 7 EC: I PA: L 4 7

Lays out and matches aerial photographs to form photographic mosaic of geographic area for use by photogrammetrists and topographical draughtsmen:

Lays out aerial photographs on table according to sequence in which they were taken and according to flight path of aircraft. Examines prints to locate established landmarks. Observes and records absence of normal overlap on adjacent prints indicating deflection of aircraft from pre-determined flight path. Locates and marks specific reference points including structures, highways, rail junctions and other prominent geographic features. Computes and measures scaled distances between reference points to establish exact relative position of adjoining prints, using tables, slide rule, dividers and protractor. Trims excess from edges of overlapping prints and glues prints to backing board, ensuring that scaled distances between reference points is maintained and print alignment is constant. Attaches numbered tag to backing board and sends mounted photographs for processing and reproduction after retouching to eliminate join lines.

2169-126 DRAUGHTING CLERK, TRANSIT(clerical)

DPT:381

GED: 4 SVP: 6 EC: I PA: S 4 7

Prepares maps, charts and graphs showing transit company operations and statistics:

Draws and letters charts, maps and graphs illustrating specific data; such as, company statistics, traffic flow, building development and population distribution. Gathers, reviews and arranges data in sequence for graphic presentation.

May prepare ink tracings of charts, maps and graphs. May prepare drawings or sketches for newspaper publication, showing route diversions, extensions and similar information.

2169-130 FORMS-LAYOUT MAN(any ind.) DPT:281

forms designer.

GED: 3 SVP: 6 EC: I PA: L 4 7

Prepares finished layout, lettering and paste-ups of forms to be used in commercial, industrial or government organizations:

Prepares sketches of invoices, production records or other forms, according to client's or forms-analyst's specifications, using drafting techniques and instruments. Lays out and draws form, using knowledge of business machines and forms-design principles. Submits initial draft for review and makes changes as required. Prepares final drawing of approved design for printing and prepares specifications for reproduction of form.

218-OCCUPATIONS IN MATHEMATICS, STATISTICS, SYSTEMS ANALYSIS AND RELATED FIELDS

This minor group includes occupations concerned with research in mathematics, statistics and actuarial science, the application of original and standardized techniques to solve problems in science, engineering and management, programming mathematical statements of problems to permit solution by electronic data-processing systems, analyzing coding systems and performing technical support duties for statistical programs. These occupations are classified in the following unit groups:

2181 Mathematicians, Statisticians and Actuaries

2183 Systems Analysts, Computer Programmers
and Related Occupations

2189 Occupations in Mathematics, Statistics,
Systems Analysis and Related Fields, n.e.c.

2181-MATHEMATICIANS, STATISTICIANS AND ACTUARIES

This unit group includes occupations concerned with research in mathematical theory, and the development and application of mathematical techniques for solving problems in fields, such as science and engineering and social science, with conducting total or sample surveys to compile statistical data and draw valid conclusions; and with applying mathematical and statistical methods to calculate premium and benefit payments of financial programs, such as insurance and annuities.

2181-110 MATHEMATICIAN, RESEARCH(prof. & tech.,
n.e.c.) DPT:088
mathematician, pure mathematics.
GED: 6 SVP: 8 EC: I PA: S

Undertakes research in fundamental mathematics to advance mathematical knowledge, and develop and improve mathematical techniques:

Studies fundamental theories of algebra, geometry, number theory, logic and other branches of mathematics, and tests hypotheses and alternative mathematical theories. Conducts experiments to discover new application of mathematical principles and techniques for use in particular applications, such as scientific investigations, engineering projects, management decision making and electronic data processing. May provide services, as a consultant or as an advisor, to research personnel concerning mathematical applications and methods. May utilize or direct use of electronic computers and related aids in solving problems.

2181-114 STATISTICIAN, MATHEMATICAL(prof. & tech.,
n.e.c.) DPT:088
GED: 6 SVP: 8 EC: I PA: S

Conducts research into mathematical basis of the science of statistics, develops statistical methodology and advises on practical application of statistical method:

Examines theories, such as those of probability, inference and variance to discover mathematical bases for new and improved methods of obtaining and evaluating numerical data. Develops and tests experimental designs, sampling techniques and analytical methods. Makes recommendations concerning their utilization in statistical surveys, experiments and tests. Investigates, evaluates and makes recommendations concerning applicability, efficiency and accuracy of statistical methods used by physical and social scientists in obtaining and evaluating data.

2181-118 ACTUARY(insur. & real estate) DPT:038
GED: 5 SVP: 9 EC: I PA: S 7

Plans and develops insurance, annuity and pension programs by assembling and evaluating statistics and other data to set terms, provisions and premiums of policies and contracts:

Prepares records on mortality, sickness, accident, disability and retirements on the basis of continual research and analysis of statistical, economic and other data. Constructs probability tables used to calculate premium rates and policy values. Designs insurance, and annuity and pension plans, and ascertains premium rates required, cash reserves and liabilities necessary, to ensure payment of future benefits. Determines equitable basis for distributing surplus earnings under participating insurance and annuity contracts, in mutual companies

May supervise and co-ordinate activities of workers engaged in

preparing and processing insurance, annuity and pension policies and contracts. May interview and hire actuarial department personnel. May specialize in one type of insurance and be designated accordingly; for example,
Actuary, Casualty
Actuary, Life

2181-122 OPERATIONS-RESEARCH ANALYST(prof. &
tech., n.e.c.) DPT:068
GED: 5 SVP: 8 EC: I PA: S 4 5

Conducts logical analyses of management problems, and formulates mathematical model of problem for solution by digital computer:

Analyzes problem in terms of management information requirements. Prepares mathematical model of problem in form of one or several equations that relate constants and variables, restrictions, alternatives, conflicting objectives, and their numerical parameters. Gathers, relates, and identifies data with variables in model by applying personal judgement and mathematical tests. Specifies manipulative and computational methods to be applied to formulations, and refers data to processing division for solving equations, programming and processing. Reviews operations and testing of model to ensure adequacy or determine need for reformulation. Prepares written reports to management, indicating problem solution or range of possible alternatives in rank of desirability and probability of success in terms of cost, profit, effectiveness or risk.

May specialize in research and preparation of contract proposals, or in specifying the competence of an organization to perform research, development or production work. May develop time and cost networks, such as program evaluation and review technique (PERT), to plan and control large scale business projects. May work in areas associated with engineering, as when analyzing and evaluating alternative physical systems, such as production processes.

2181-126 DEMOGRAPHER(prof. & tech., n.e.c.) DPT:188
GED: 5 SVP: 8 EC: I PA: S

Plans and conducts surveys and experiments to obtain and analyze statistics concerning human populations:

Performs duties similar to those of 2181-134 STATISTICIAN, APPLIED (prof. & tech., n.e.c.). Specializes in obtaining statistics concerning human populations including their size, growth, family structure, distribution, movement, composition, age, sex, race and economic status.

2181-130 MATHEMATICIAN, APPLIED(prof. & tech., n.e.c.)
DPT:188
GED: 5 SVP: 8 EC: I PA: S

Applies mathematical principles and techniques to solve problems in activities, such as scientific research, engineering and management:

Studies problems raised by scientists, engineers, managers and others to determine suitable methods of solution. Applies mathematical principles and techniques to solve problems in research, development, production, logistics and other functional areas, utilizing knowledge of subject matter or field to which applied; such as, electronics, atomic energy, life sciences or economics. Performs computations and applies methods of numerical analysis. Operates or directs operation of electronic and mechanical computation equipment and other aids.

May act as advisor or consultant.

2181-134 STATISTICIAN, APPLIED(prof. & tech., n.e.c.)
DPT:188
GED: 5 SVP: 8 EC: 1 PA: S

Plans surveys, and collects, organizes, interprets, summarizes and analyzes numerical data on sampling or complete enumeration bases, applying statistical theory and methods to provide usable information in scientific and other fields:

Develops questionnaire to elicit information required by survey design. Conducts surveys utilizing sampling techniques, or monitors experiments to obtain types of information desired. Evaluates reliability of sources of data. Adjusts and weighs raw data as necessary and organizes and summarizes data into tabular forms amenable to analysis and interpretation. Directs computation of averages, ratios, distributions, correlation coefficients and other items. Presents data in form of tables and graphs. Writes reports describing sources of data and limitations on data reliability or usability by management, scientists and others. Analyzes and interprets data to point up significant differences and relationships among sources of data, preparing conclusions and forecasts based on data summaries. May specialize in analyzing and interpreting data in one or more subject matter fields and be designated accordingly; for example, Statistician, Analytical

2181-138 STATISTICIAN, BIOLOGICAL AND AGRICULTURAL SCIENCE(prof. & tech., n.e.c.)
DPT:188
GED: 5 SVP: 8 EC: 1 PA: S

Plans and conducts surveys and experiments to obtain statistics for use in fields of basic scientific research related to life processes of plants, animals and humans:

Performs duties similar to those of 2181-134 STATISTICIAN, APPLIED (prof. & tech., n.e.c.). Specializes in obtaining statistics to study the relationships between groups of organisms, using statistical methods. Obtains statistics; such as, those concerning cause and incidence of disease and efficacy of preventive measures and immunization techniques, to assist in medical research and public health programs. May be classified according to a particular specialization and be designated accordingly; for example, Statistician, Medicine

2181-142 STATISTICIAN, BUSINESS AND ECONOMICS
(prof. & tech., n.e.c.) DPT:188
GED: 5 SVP: 8 EC: 1 PA: S

Plans and conducts surveys and experiments to obtain statistical information business on economic activities:

Performs tasks similar to those of 2181-134 STATISTICIAN, APPLIED (prof. & tech., n.e.c.). Specializes in planning and conducting surveys and experiments to obtain statistical information on income, trade, production, prices, finance, taxation, labour and employment.

May obtain and evaluate data concerning operations of financial institutions and be designated accordingly, Statistician, Financial

2181-146 STATISTICIAN, PHYSICAL SCIENCE AND ENGINEERING(prof. & tech., n.e.c.) DPT:188
GED: 5 SVP: 8 EC: 1 PA: S

Plans and conducts surveys and experiments to obtain statistical information for use in physical science and engineering:

Performs tasks similar to those of 2181-134 STATISTICIAN, APPLIED (prof. & tech., n.e.c.). Specializes in planning and conducting surveys and experiments to obtain statistical information, and in applying such specialized theory and methodology as statistical mechanics (prediction of properties of matter in terms of properties of molecular composition).

May devise procedures for testing and inspecting industrial products produced on mass scale and establish plant quality control programs based on theory of probability. May make statistical analyses of information affecting operations of industrial establishments. May be classified according to procedure, product or establishment and be designated accordingly; for example, Quality-Control Analyst
Statistician, Chemistry
Statistician, Industrial

2181-150 STATISTICIAN, SOCIAL SCIENCE(prof. & tech., n.e.c.)
DPT:188
GED: 5 SVP: 8 EC: 1 PA: S

Plans and conducts surveys and experiments to obtain statistical information for use in field of social science:

Performs duties similar to those of 2181-134 STATISTICIAN, APPLIED (prof. & tech., n.e.c.). Specializes in planning and conducting surveys and experiments to obtain statistical information in political science, anthropology, sociology and psychology.

May obtain and evaluate data concerning public opinion and education and be designated accordingly; for example, Statistician, Education
Statistician, Opinion Polling

2181-154 STATISTICIAN, VITAL(gov. serv.) DPT:188
GED: 5 SVP: 8 EC: 1 PA: S

Plans surveys, and collects and analyzes vital statistics related to variables, such as, births, marriages and deaths:

Performs duties similar to those of STATISTICIAN, APPLIED (prof. & tech., n.e.c.). Specializes in planning registration systems for recording data on births, deaths, stillbirths, notifiable diseases, accidents, marriage, divorces and annulments. Designs tabulations and publications from registers and analyzes resulting statistics.

May specialize in vital statistics on public health and be designated accordingly; for example, Statistician, Public Health

2183-SYSTEMS ANALYSTS, COMPUTER PROGRAMMERS AND RELATED OCCUPATIONS

This unit group includes occupations concerned with planning, implementing and controlling electronic data-processing services and the programming of computer systems. Typical areas of specialization include: analysis of computer systems; and providing advice on availability and use of electronic data-processing resources, capabilities and technological development. Occupations concerned with organizational and methods analysis are classified in Unit Group 1173, ORGANIZATION AND METHODS ANALYSTS. Occupations concerned with the operation of electronic data-processing equipment are classified in Unit Group 4143 ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS.

2183-110 SYSTEM ANALYST BUSINESS, ELECTRONIC DATA-PROCESSING(prof. & tech., n.e.c.) DPT:131
commercial-systems analyst.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Analyzes business problems, such as development of integrated production and inventory control, cost analysis, selects appropriate equipment, and develops programs for electronic data-processing systems: Confers with department heads or project directors to ascertain specific management information requirements; such as, nature and degree of summarization, identification of items and format for presentation of results. Analyzes systems, procedures and methods used in various operations selected for conversion, determines feasibility and extent of conversion, and prepares process flow-charts and diagrams. Develops new applications and long-range plans for customer utilization of electronic-data-processing system, and analyzes capabilities and limitations of computers and peripheral equipment. Devises means of deriving input data to select a feasible and economic method for personnel operating equipment. Tests and eliminates errors in computer programs, to prepare final system of operations. Assists sales personnel of electronic-data-processing services in preparation and presentation of proposals to customer, in non-technical language. Prepares cost estimates and summary of savings resulting from proposed systems. Maintains accurate records and documentation of system analysis to facilitate follow-up action. Prepares instruction manuals covering use, operation, routine maintenance and technical specifications of key-punch machines, sorters, and other related tabulator equipment, and trains operating and supervisory personnel. Designs new forms and other documents relating to computer opera-

tions. Supervises and co-ordinates the work of programmers. May write programs, using computer coding symbols in language processable by computer. May specify power-supply requirements and recommend purchase of air-conditioning equipment to control temperature, humidity and dust. May select and design forms of use in program.

2183-114 SYSTEMS ANALYST ENGINEERING-SCIENTIFIC, ELECTRONIC DATA-PROCESSING(prof. & tech., n.e.c.) DPT:131
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Analyzes physical systems and scientific, engineering and other technical problems and formulates mathematical models for solution by electronic data processes:

Consults with engineers and scientists to define and analyze problem. Determines design configuration and process and computer system required. Searches libraries and other sources for applicable mathematical formulations and pertinent data. Examines verbal descriptions or graphic representations of problem. Defines definition of project and prepares mathematical model of problem area, applying knowledge of higher mathematics, to relate constants, variables, restrictions, alternatives, objectives and their numerical parameters. Reduces problem to computer-processable form by applying knowledge of numerical analyses, expressing it in computer-oriented language, and preparing data-flow chart. Refers formulations to programmers. Confers with originator of problem to discuss adequacy and applicability of computer output or need for reformulation of model after trial run on the computer. Prepares technical reports describing step-by-step solution of problem, and develops problem-solving techniques. Supervises and co-ordinates the work of programmers.

May prepare articles for publication in engineering and scientific journals. May use small-scale analog or keyboard-input-digital computer to assist in preparing or testing parts of model formulation.

2183-118 PROGRAMMER, BUSINESS(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: 1 PA: S 6 7

Writes program in computer-process language to provide required data for management and resolve business problems:

Studies business-problem work-flow chart or diagram prepared by systems analysts. Confers with systems analysts or departmental representatives concerned with program to resolve questions of intent, output requirements, input data acquisition, extent of automatic programming, coding use and modifications, and inclusion of internal checks and controls. Writes program in logical sequence, by applying knowledge of computer capabilities, subject matter and symbolic logic. Writes detailed logical flow-chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operation involved. Prepares block diagrams to specify equipment lay-out. Devises sample input data to test adequacy of program. Corrects program errors by such methods as altering program steps and program sequence. Prepares written instructions to guide operating personnel during production runs. Supervises junior programmers on a project.

May analyze, review and rewrite programs to increase operating efficiency or adapt to new requirements. May compile documentation of program development and subsequent revisions. May train subordinates in programming. May plan, schedule, analyze and direct preparation of programs and be designated accordingly; for example, Programmer Chief, Business

2183-122 PROGRAMMER, ENGINEERING AND SCIENTIFIC(prof. & tech., n.e.c.) DPT:231
GED: 5 SVP: 7 EC: 1 PA: S 6 7

Writes program in computer-process language to solve engineering and scientific problems:

Studies problem statement prepared by systems analysts to determine nature of data-processing requirements. Interprets symbolic statement of problem, prepares logical flow-charts and block diagrams, and encodes resolvent equations for processing, by applying knowledge of differential equations and numerical analysis, and the capabilities and limitations of computers. Confers with engineers, scientists, technical personnel and customers to resolve problems of intent, inaccuracy, or

feasibility of computer processing. Writes program, in a logical sequence, by applying knowledge of computer capabilities, subject matter and symbolic logic. Observes or operates computer during testing or processing runs to analyze and correct programming and coding errors. Reviews results of computer runs with interested personnel to determine necessity for modifications and re-run. Develops new sub-routines for a specific area of application or expands on applicability of current general programs to simplify statement, programming or coding of future problems. Supervises junior programming personnel on a project.

2183-126 TOOL PROGRAMMER, NUMERICAL CONTROL(any ind.) DPT:261
GED: 4 SVP: 8 EC: 1 PA: S 4 6 7

Writes program in computer-process language to control automatic machining of metal parts:

Analyzes such data as complexity of machining required, production process and time involved, to determine whether more economic production would result from numerically-or manually-controlled machine tools; such as, punch presses, shearing machines and lathes. Studies design data and drawings to determine intent of designer and visualize configuration of work piece. Examines specifications to determine dimensions of parts. Determines type and size of cutting tools, according to hardness of metal stock at which machining would start. Draws sketches of part to plan number, location and direction of cutter paths. Establishes location of tool set point, starting point, and cutter change points by three-dimensional co-ordinates, according to reference point and location of stock on fixture, and plots cutter centre paths on graph paper. Calculates radii of simple and complex irregular curves, using square root calculator and calculating machine. Writes program in series of symbolic and numeric statements that prescribe machining of work piece in factors; such as, geometric regions and boundaries, radii, clearance planes, machine modes, tolerance limits, size and type of cutting tool, initial position, feed rates, direction and movement of cutting tools, and coolant use. Observes machining of first part produced by automatically-controlled machine, and verifies accuracy of programming, using micrometer and gauges.

2183-130 PROGRAMMER, DETAIL(prof. & tech., n.e.c.) DPT:361
GED: 4 SVP: 6 EC: 1 PA: S 6 7

Selects symbols from coding system peculiar to model of computer, applies them to successive steps of program, and writes machine process instructions:

Identifies input data; such as, type, quantity and quality of products, quantity and quality of raw material and production capacity of equipment, utilizing knowledge of computer program. Reads and interprets sequence of alphabetic, numeric or special characters from handbook, or memory, for each program step. Writes computer-process machine instructions in symbolic language or code for transfer to punch cards or machine input tape. Marks code sheets indicating relationship between code and program steps to simplify debugging of program. Confers with other programming personnel to clarify input program.

May assist in analyzing computer results and developing operating schedules in conjunction with business, engineering and scientific programmers.

2189-OCCUPATIONS IN MATHEMATICS, STATISTICS, SYSTEMS ANALYSIS AND RELATED FIELDS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with activities in the fields of mathematics, statistics and systems analysis; such as, analyzing coding systems and performing technical duties in statistical programs.

2189-110 CRYPTANALYST(gov. serv.) DPT:281
cipher expert.
 GED: 5 SVP: 7 EC: I PA: S 5 7

Analyzes secret coding systems and decodes messages for military, diplomatic or law-enforcement agencies:
 Examines secret messages for characteristics that reveal coding system employed in message. Analyzes message, using formulas, code books, chemicals, computer technology, mechanical devices, and knowledge of commonly-used coding keys. Decodes entire message and consults books, magazines, government publications and police files to obtain corroborative evidence.
 May design and develop codes.

2189-114 STATISTICAL TECHNICIAN(prof. & tech., n.e.c.) DPT:231
 GED: 4 SVP: 7 EC: I PA: S 4 7

Carries out a variety of technical functions of a statistical nature in

support of engineers, economists, statisticians, mathematicians and other scientists, using a knowledge of mathematical and statistical principles, by performing any combination of the following duties:
 Assists in determining survey designs, and drafting questionnaires to obtain information on employment, working conditions, salaries, product suitability and various other subjects. Develops coding systems and tabulation methods for processing informations received. Supervises the mailing of questionnaires, collection and compilation of data, coding and mechanical tabulation procedures during survey operations. Computes averages, means, modes, deciles, quartiles, medians, deviations, correlations and other statistical data to aid in the examination and evaluation of trends. Compiles, analyzes and presents data in mathematical, tabular or chart form for interpretation by statisticians, economists and others. Corresponds with survey participants to explain purpose of survey, clarify problems and collect other required information. Assists in the preparation and distribution of final reports.

ARTISTIC, LITERARY, PERFORMING ARTS AND RELATED OCCUPATIONS

This major group includes occupations concerned with creating and executing artistic works, by sculpturing, painting, drawing, engraving, etching, and by applying artistic media for illustrative, decorative and sales promotion purposes; creating designs for product and interior decoration; taking photographs; directing and operating motion picture and television cameras; composing, adapting, conducting and performing musical works and dances; producing, directing, and acting in theatrical, motion picture and broadcast productions; making broadcast announcements; translating and interpreting languages, and preparing and editing written material. Occupations primarily concerned with teaching music, dancing, and drama are classified in Major Group 27, **TEACHING AND RELATED OCCUPATIONS**. **ARTISTIC, LITERARY, PERFORMING ARTS AND RELATED OCCUPATIONS** are classified in the following minor groups:

- 331 Occupations in Fine and Commercial Art,
Photography and Related Fields
- 333 Occupations in Performing and Audio-
visual Arts
- 335 Occupations in Writing

331-OCCUPATIONS IN FINE AND COMMERCIAL ART, PHOTOGRAPHY AND RELATED FIELDS

This minor group includes occupations concerned with creating and executing artistic works in a personally interpreted manner, by painting, sculpturing, drawing, engraving, etching, and other methods; creating designs for industrial and commercial products and interior decoration; designing cartoons and illustrations for books, magazines and other publications; applying artistic media for illustrative, decorative, and sales promotion purposes; and obtaining pictures and likenesses with still, motion picture and television cameras. Supervisory occupations in this minor group are classified in the same unit groups as the workers they supervise. **OCCUPATIONS IN FINE AND COMMERCIAL ART, PHOTOGRAPHY AND RELATED FIELDS** are classified in the following unit groups:

- 3311 Painters, Sculptors and Related Artists
- 3313 Product and Interior Designers
- 3314 Advertising and Illustrating Artists
- 3315 Photographers and Cameramen
- 3319 Occupations in Fine and Commercial Art,
Photography and Related Fields, n.e.c.

3311-PAINTERS, SCULPTORS AND RELATED ARTISTS

This unit group includes occupations concerned with creating and executing original artistic works in a personally interpreted manner, by painting, drawing, sculpturing, engraving and etching. Activities include: creating pictures, abstract designs and similar artistic compositions, employing paints, pencils, pastels, ink or other media; creating three-dimensional decorative and representational forms by shaping materials, such as wood, stone, clay or metal; and creating original designs and engraving or etching them on metal, wood or other materials for reproduction. Occupations concerned with painting, sculpturing, engraving and etching in which work is performed on a production basis are classified

in other major, minor, and unit groups. Occupations concerned with conserving and restoring art works are classified in Minor Group 235, **OCCUPATIONS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES**. Carvers in wood, stone or other materials engaged in commercial reproduction of artistic objects are classified in Unit Group 3319.

3311-110 ARTIST, PICTORIAL(prof. & tech., n.e.c.) DPT:061
GED: 4 SVP: 8 EC: B PA: L 4 5 7

Creates pictures, abstract designs, and similar original compositions, employing various media and techniques:
Conceives picture or design, and selects medium, such as oil, water colours, pencil, pastels or ink, and prepares material to be used for the painting or drawing. Arranges objects in required composition, or directs model to pose for desired effect. Sketches preliminary outline

of composition on paper, canvas, wood panel or other chosen surface. Mixes liquid colouring matter, if required, and applies medium, using appropriate techniques to harmonize relationships of line, colour, design and mass into a unified and artistic arrangement. Coats or sprays finished artwork with fixative or preservative, such as varnish or acrylic solution.

May produce illustrations for publication. May be designated according to specialization in medium, technique and subject matter; for example,

Artist, Charcoal
Painter, Landscape
Painter, Oils
Portrait Painter
Sketcher, Ink

3311-114 SCULPTOR(prof. & tech., n.e.c.) **DPT:061**
GED: 4 SVP: 8 EC: B 6 PA: L 4 5 7

Creates three-dimensional decorative and representational forms by shaping materials, such as wood, stone, clay or metal, performing any combination of the following duties:

Conceives design for sculpture, and decides on material and techniques to be used. Selects material of suitable proportions, quality and texture. Sketches design of proposed sculpture, or makes models of wax or plaster. Arranges objects for required composition, or directs model to pose for artistic works. Carves, or otherwise shapes, material to desired form, using hand or power tools, such as hammers, drills, chisels and knives. Models plastic substances, such as clay or wax, using fingers or hand tools to form objects. Fires clay objects in kiln, or prepares moulds for casting sculpture in metal. Devises artistic forms from metal, using welding or metal-working equipment, or from stone, using masonry tools.

May be designated according to technique or medium employed, or type of sculpture executed; for example,

Modeler Clay
Sculptor, Eskimo Art
Sculptor, Metal
Sculptor, Monument
Sculptor, Wood

3311-118 PRINTMAKER(prof. & tech., n.e.c.) **DPT:081**
engraver and etcher, artistic.
GED: 4 SVP: 7 EC: I PA: S 4 7

Creates, engraves, etches and prints fine-art graphics, by any of the following methods:

1. Conceives, and draws design on plate or block of metal, wood or other material, using ink, crayon or chalk. Cuts design into plate or block following lines of drawing to produce a surface-in-relief, using graving tools. 2. Cleans surface of plate and coats surface of plate with acid-resistant compound. Conceives, and cuts design through compound, exposing parts of plate to be etched, using graving tools. Immerses plate in acid solution to corrode exposed parts and produce a surface-in-relief. Removes plate and washes plate to halt etching action. Repeats etching process, coating parts of the design with compound when they are sufficiently etched, until desired effect is achieved. 3. Conceives and draws design or sketch on paper, using pen and ink, pencil or charcoal. Perforates outline of design by hand, using perforating tool. Lays perforated design, face down, on smooth block of soft stone and applies marking material to perforations. Removes perforated design, leaving marked outline on surface of block. Cuts and chips along lines of outline using stone-working tools. Positions plate or block in hand press. Coats printing surface of block or plate with ink, using roller or fills depressions in surface with ink. Lays sheet of paper, cloth or other material on inked printing surface. Pulls lever or turns screw of press to exert pressure on sheet and print design. Corrects engraving or etching as required after trial impression.

3311-122 CARVER, TOTEM POLE(woodworking) **DPT:281**
GED: 3 SVP: 8 EC: B PA: H 3 4 7

Carves and paints designs or figures of people or animals representing Canadian Indian tribal history, legends, and motifs on wooden pole, using hand tools:

Positions pole in cradle or on wood blocks, preparatory to carving, using crow bars or jacks. Analyzes information concerning family lineage or tribal history to be depicted, and draws outline of appropriate symbols on pole, using pencil or chalk. Carves symbols in relief, cutting along outlines, using hand tools such as axe, adze, and

double-bladed curved and straight knives. Paints carved totem pole in appropriate colours, using brush and native-dye mixtures or commercial paints.

May select tree to be used for totem pole in forest or lumberyard, trim, de-bark, and transport it to workshop.

3313-PRODUCT AND INTERIOR DESIGNERS

This unit group includes occupations concerned with creating designs for industrial and commercial products and interior decoration, by harmonizing aesthetic considerations with technical and other requirements. Activities include: creating designs for a wide variety of manufactured products, such as furniture and furnishings, clothing, textiles, pottery, handbags, shoes, paper securities, and packaging containers; designing interior decorations and planning furnishing of homes, public buildings and other places; setting-up advertising displays; designing and laying-out stained-glass windows, and designing sets for stage, motion picture, and television productions.

3313-110 EXHIBITION AND DISPLAY DESIGNER(prof. & tech., n.e.c.) **DPT:031**
designer, shows and demonstrations.
GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Designs and sets up exhibitions and displays, for purposes such as advertising, publicity and education:

Discusses design project with supervisor or client. Examines site of proposed display, and sketches or photographs area. Studies sketches or photos to determine colours, shading and perspective, and to formulate a suitable arrangement of materials and background. Makes, or directs other workers to make working drawings and models of displays, using drafting instruments, scissors and cardboard. Submits final design to supervisor or client for approval. Directs workers erecting displays from materials; such as, wood, plastic, plaster, cloth and crepe paper. Designs and positions explanatory signs or pictures to assist understanding of exhibit or display by viewers. Directs positioning of spotlights, coloured lighting and other illumination.

3313-114 INTERIOR DESIGNER AND DECORATOR(bus. serv.) **DPT:051**
home-decorating consultant; interior decorator.
GED: 5 SVP: 8 EC: I PA: L 4 5 6 7

Plans and designs aesthetic interiors for homes, industrial, commercial and institutional establishments and other structures:

Analyzes functional requirements, desired mood and purpose of furnishing interior, based on client's needs and preferences. Devises harmonious colour scheme, and sketches plans of areas showing arrangement of furniture and accessories. Estimates cost and amount of materials required, and presents plans to client for approval. Selects or recommends purchases of decorative and functional materials and accessories, such as, furniture, lighting fixtures and pictures, or creates original designs for furnishings to conform with decorative scheme. May direct workers painting walls, laying carpets, installing fixtures and draperies, and arranging furniture and accessories.

3313-118 FURNITURE DESIGNER(furn.) **DPT:061**
GED: 5 SVP: 8 EC: I PA: S 4 5 6 7

Designs furniture line or individual pieces for manufacture, using knowledge of design trends and manufacturing techniques:

Confers with production, design, and sales personnel to obtain and discuss design suggestions. Evaluates proposals and prepares freehand sketches of promising designs. Obtains approval from customer, design committee, or authorized company officials, and prepares scale drawing of design. Draws or directs preparation of working drawings specifying dimensions and materials to be used in manufacturing of product.

May plan modifications to conform to changes in design trends and customer preferences. May train assistants or instruct factory personnel on special requirements when introducing new models.

3313-122 SET DESIGNER(broadcast, motion pic. & stage)
DPT:061
stage-scenery designer.
GED: 5 SVP: 8 EC: 1 PA: L 4 5 6 7

Designs sets for stage, television and motion picture productions: Reads script to determine setting in time, place and mood. Studies pictorial and written information in libraries and archives, and visits museums and art galleries to become familiar with architecture and decor of locale and period to be portrayed. Sketches and paints plans, using artists' materials. Submits plans to director and producer for approval. Constructs miniature sets in cardboard, plaster or plastic material, using hand tools. Prepares working drawings indicating elevation and detailed plan of set for scene builders. Oversees construction of setting and furnishings according to miniature set. Creates special stage lighting patterns to achieve dramatic or decorative effects.

3313-126 STAINED-GLASS ARTIST(glass)
DPT:061
painter.glass; stained-glass-window designer.
GED: 5 SVP: 8 EC: 1 PA: L 4 5 6 7

Designs and creates stained-glass for windows, lampshades and other articles, utilizing knowledge of portraiture, church symbolism, heraldry, ornamental design, and effect of colour, light and shade on glass:

Consults with client or supervisor to determine subject matter to be portrayed. Creates colour design in miniature or facsimile, for customer's approval, using coloured papers. Discusses, with other workers, technical problems encountered. Indicates on design, where glass is to be cut and leaded. Stains and paints pieces of coloured glass. Accents mosaic design by darkening hair, painting out background around head, and marking features of face, folds of drapery and other details, using artist's brush and powder colours blended with liquid base.

May fire pieces of glass in kiln to harden colours, and retouch glass between firings. May specialize in a particular aspect of production and be designated accordingly,
Cartoon Maker, Stained Glass

3313-130 FUR DESIGNER(fur goods)
DPT:081
GED: 5 SVP: 8 EC: 1 PA: L 4 5 6 7

Designs and prepares patterns of fur garments, such as coats, capes, jackets and stoles, for customers:

Sketches design on paper to make garment, utilizing knowledge of various kinds of furs, fur-handling techniques and fashion trends. Draws patterns to scale, from sketched design, on paper for application to large production of garment, using drawing instruments, and cuts out patterns, using cutting tool.

May design cloth coats or coats combining cloth and fur materials. May perform custom design work for special clients and oversee manufacture of designed items.

3313-134 GARMENT DESIGNER(garment & fabric; knit goods)
DPT:081
clothes designer.
GED: 5 SVP: 8 EC: 1 PA: L 4 7

Creates designs and prepares patterns for manufacture of new types and styles of garments:

Sketches outline of pattern on printed forms. Draws various parts of garment to full scale on sheet of paper, using ruler and drawing instruments. Cuts out drawings with scissors to make pattern for experimental garment. Writes specifications for garment, describing construction, colour scheme and type of material to be used. Examines experimental garment on model or form, and makes any necessary changes to pattern.

May arrange for newly designed garments to be tested by actual use, washing or dry-cleaning. May direct activities of garment cutters and sewers. May be designated according to garment designed; for example,
Glove Designer
Jacket Designer

3313-138 INDUSTRIAL PRODUCTS DESIGNER(prof. & tech., n.e.c.)
DPT:081
GED: 5 SVP: 8 EC: 1 PA: L 4 5 6 7

Creates designs for the fabrication of products, considering both aesthetic qualities and technical requirements:

Studies purpose, technical specifications, cost limitations, available materials and methods of production, preferences of potential users, and other factors influencing design of a wide variety of products. Formulates design to achieve a pleasing appearance compatible with utilitarian function and cost requirements. Prepares sketches, showing style, shape, size, and general appearance of product. Makes alterations to designs, as required by management or clients.

May make technical drawings, models, or patterns of products for guidance of production engineers and craftsmen. May supervise technical staff engaged in preparing detail drawings and production specifications. May specialize in design of particular type of product and be designated accordingly.

3313-142 SHOE DESIGNER(shoes)
DPT:081
GED: 5 SVP: 8 EC: 1 PA: S 4 7

Creates or modifies designs for shoes:

Prepares sketches, diagrams or charts to illustrate design, using drawing instruments, such as crayons, coloured ink, shading pencils, rulers and angles. Writes specifications, such as colour scheme, type of construction and materials to be used, on design. Devises changes in established manufacturing methods or procedures, such as deletion or addition of operations to produce designed shoe. Compiles instructions for factory production and administrative departments on changes of new designs. Cuts paper patterns and makes cardboard templates, and metal or wooden patterns of shoe design.

May gather data on competitors' products and analyze new styles, materials, and manufacturing methods. May direct activities of other designers and pattern makers and be designated accordingly.

3313-146 TEXTILE DESIGNER(textile)
DPT:061
cloth designer.
GED: 5 SVP: 8 EC: 1 PA: S 4 5 6 7

Originates designs for fabrication of textile cloth, specifying weave, pattern, colour and gauge of thread, to create new fabrics that meet functional requirements and fashion preferences of consumers:

Develops new ideas for fabrics through study of fashion trends and knowledge of textiles and their various uses. Consults with technical and merchandising staff to obtain design ideas and to evaluate customer acceptance of new types and kinds of fabrics. Sketches designs for patterns on graph paper, using pens and rulers. Prepares written instructions to specify such details as weave of fabric, finish to be applied, and colour to be used. Examines sample woven on sample loom and modifies design if necessary.

May prepare cost estimates for producing new fabrics. May be designated according to product designed; for example,
Rug Designer
Woven-Label Designer

3313-150 COMMERCIAL-DESIGN ARTIST(prof. & tech., n.e.c.)
DPT:081
GED: 5 SVP: 7 EC: 1 PA: S 4 7

Designs decorative patterns for application to commercial products:

Studies purpose, technical specifications, cost limitations and other factors influencing decoration of products such as, fabrics, wallpaper, ceramics, and glassware. Creates and executes design, using artists' materials, and submits design for approval. Makes alterations as required by management or customer. Does not design shape or texture of industrial products, such as appliances, furniture and textiles.

May make drawings or samples of decoration for guidance of production engineers or craftsmen. May specialize in decoration of particular type of product and be designated accordingly.

3313-154 PACKAGE DESIGNER(prof. & tech., n.e.c.)
DPT:081
GED: 5 SVP: 7 EC: 1 PA: L 4 7

Designs containers for products, such as foods, beverages, toiletries, cigarettes and medicines:

Considers package factors, such as ease of handling, storage, con-

sumer appeal, identity of product, and production cost, and sketches basic design of container. Revises and completes design, adding colour and other markings, using paint and brushes. Fabricates model in actual or facsimile of material to be used for production package.

3313-158 POTTERY DESIGNER(cement, stone & clay) **DPT:081**

GED: 5 SVP: 7 EC: I PA: L 4 7

Creates drawings of pottery shapes and patterns, and makes prototype piece:

Sketches new designs, motifs and styles, using drawing instruments. Transfers decorative design to finished drawing of pottery piece, and applies water colours, arranging shades and colours harmoniously. Makes clay prototype by hand on potter's wheel. Paints design on prototype piece and applies underglaze, using brushes. Revises and adapts shape and pattern designs to production requirements, applying knowledge of glazes, firing, decorating and production processes. May fire sample piece in kiln.

3313-162 WOMEN'S FASHION DESIGNER(ret. trade) **DPT:061**

custom designer.

GED: 5 SVP: 7 EC: I PA: L 4 5 6 7

Designs custom-styled women's garments, according to customers' measurements and fashion preferences:

Discusses fabric, style and colour, advising customer on current fashion trends, suitability and desired appearance. Records garment specifications on sketch for guidance of seamstress. Fits partially completed garment on customer, and marks alterations necessary to achieve correct fitting.

May design single garment or entire wardrobe for customer. May supervise staff engaged in sewing and altering garments.

3313-166 DESIGNER, PAPER SECURITIES(prof. & tech., n.e.c.) **DPT:061**

GED: 4 SVP: 8 EC: I PA: S 4 5 6 7

Designs artwork for the printing of securities, such as currency and bonds, and modifies submitted sketches, employing knowledge of engraving and printing techniques:

Examines client's sketch of proposed design. Modifies proposed design to conform with characteristics and limitations of engraving and printing equipment, and to introduce elements to discourage counterfeiting, using drawing instruments. Selects or suggests colours pleasing to the eye, consistent with security requirements.

May originate designs and design suggestions for clients. May suggest decorative elements and various printing techniques and combinations to further foil counterfeiting and add artistic merit. May be designated according to type of security designed; for example, Bank-Note Designer

3313-170 SUPERVISOR, DISPLAY(bus. serv.) **DPT:031**

fashion co-ordinator; senior-display artist.

GED: 4 SVP: 7 EC: I PA: L 4 5 6 7

Supervises and co-ordinates activities of workers engaged in designing, laying out and constructing displays for store windows or interiors:

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Designs layout for display, and selects themes, colours and properties to be used. Oversees construction of decorative props from such materials as wood, plastic, paper and glass. Plans lighting arrangement and selects colouring medium. May prepare and maintain complete set of store-floor plans.

3313-174 EMBROIDERY DESIGNER(textile) **DPT:081**

GED: 4 SVP: 7 EC: I PA: S 4 7

Creates designs to be embroidered on fabrics:

Develops new designs and patterns, utilizing knowledge of customer preferences, aesthetic appeal and embroidery techniques. Draws design on paper and submits it to management or customer for approval. Draws design to scale from original drawing, or from sketches, samples or pictures, using pens and coloured inks. Transfers design to paper pattern by rubbing red marking wax over perforations made in design.

May draw enlargement of design to be used in pantograph machine. May perforate designs, using electric-perforating tool.

3313-178 HANDBAG DESIGNER(leather goods) **DPT:081**

GED: 4 SVP: 7 EC: I PA: S 4 7

Creates designs for ladies' handbags:

Sketches design on paper, using drawing instruments and materials, such as coloured ink, pens, shading pencils, and rulers. Writes design specifications, such as colour scheme, type of handbag, and material, in margin of sketch. Drafts master pattern of designed parts onto manila paper, cardboard, or pressboard, and draws in details, such as stitching and ornamentation, using drafting instruments. Cuts pattern and handbag materials, and makes sample article, using scissors, knife and sewing machine. Draws diagrams or sketches to illustrate design for commercial publications.

May make fibre, metal, or wooden patterns. May specialize in designing metal frames for women's handbags and be designated accordingly; for example, Handbag-Frame Designer

3313-182 SIGN DESIGNER(bus. serv.) **DPT:081**

GED: 4 SVP: 7 EC: I PA: S 4 7

Designs illuminated and non-illuminated signs for buildings, or other structures:

Drawn design outlines on poster sheet showing details according to customers' instructions. Determines style of lettering, and positions and draws letters for sign, using artists' tools. Draws pictorials, special effects and background treatment for sign, applying knowledge of production limitations for plastic materials and glass tubing. Determines sign colouring or matches colour requests of customer, and colours design, using paints or crayons. Sketches sign in perspective as it will appear in mounting, for customer approval. Writes detailed specifications, indicating dimensions, colours, materials, special effects and background treatment for draftsman's use in preparing working drawing for production purposes.

3313-186 CREST DESIGNER(misc. prod. fab., n.e.c.) **DPT:281**

GED: 4 SVP: 5 EC: I PA: L 4 7

Designs and lays out patterns to be utilized in the printing of fabric crests for organizations, such as sports clubs and schools:

Draws scaled designs containing letters, numbers and symbols, such as crowns or animals to depict traditions or characteristics of organizations, using draughting instruments. Marks specified colours and printing instructions on finished drawing, employing knowledge and experience of printing methods.

3313-199 MISCELLANEOUS PRODUCT-AND-INTERIOR DESIGNERS

This group includes product and interior designers, not elsewhere classified; for example those who design fishing-lures, luggage, interiors of travel trailers and mobile homes, and novelties, such as, brushes, housewares and eyeglass frames. Typical examples of occupational titles covered by this residual group definition are:

Designer, Luggage(leather goods)
Designer, Novelties(misc. prod. fab., n.e.c.)
Fishing-Lure Designer(sport & toy)
Interior Designer, Mobile Homes(motor vehicle)

3314-ADVERTISING AND ILLUSTRATING ARTISTS

This unit group includes occupations concerned with creating and executing illustrations, designs, cartoons and caricatures for books, magazines, posters, newspapers, roadside billboards, television commercials, animated motion pictures and for other purposes related to advertising, illustration, entertainment, and the distribution of information. Scientific illustrators are classified in this unit group. Technical illustrators in the fields of engineering and architecture are classified in Unit Group 2163, DRAUGHTSMEN.

3314-110 SUPERVISOR, ART(prof. & tech., n.e.c.) DPT:031
GED: 5 SVP: 8 EC: 1 PA: L 4 5 6 7

Supervises and co-ordinates activities of artists engaged in preparing illustrations and layouts for publications or for posters, signs and films:

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Designs artwork, either with or without specifications, and prepares layouts for single and multicolour illustrations, using knowledge of graphic-arts techniques.

May direct photographing of machines, machine parts, or other subject matter to illustrate texts. May supervise artists engaged in a particular activity, such as illustrating and laying out advertisements for newspaper publication, and be designated accordingly; for example,

Supervisor, Advertising Art

3314-114 ANIMATOR(broadcast., motion pic. & stage) DPT:061
animation artist; cartoonist, motion picture.
GED: 5 SVP: 7 EC: 1 PA: S 4 7

Creates and draws motion-picture-animated cartoons, delineating in successive drawings, action necessary to portray and dramatize movement of characters:

Prepares script or story board for production of film. Makes layout of scenes, and labels each section with designated colours, or indicates colours to be used. Creates and prepares sketches and model drawings of characters. Draws detailed cartoons of all moving objects for all frames of animated films, delineating sufficient number of successive drawings to create illusion of animated characters when sequence is projected. Co-ordinates work of assistants.

May prepare successive drawings to portray wind, rain, fire and similar effects. May direct and edit sound recording of dialogue to prepare audio-video synchronization.

3314-118 COMMERCIAL ARTIST(prof. & tech., n.e.c.) DPT:061
graphic artist.
GED: 5 SVP: 7 EC: 1 PA: S 4 5 6 7

Creates and executes illustrations and designs for reproduction in newspapers, books or other publications, or for posters, signs and billboards:

Studies proposals, sketches or written instructions, and confers with colleagues and clients to determine style of illustrations, space limitations, colour restrictions and similar considerations. Sketches subject to be illustrated, rendering details from memory, models or reference materials, and submits drawings for approval. Executes approved work in medium best suited to produce desired visual effect in proposed method of reproduction. Designs lettering for captions, titles, advertisements and other purposes.

May specialize in a particular field and be designated accordingly; for example,

Advertising Illustrator
Fashion Artist
Litho Artist
Poster Artist
Sign Writer, Hand

3314-122 MEDICAL ILLUSTRATOR(prof. & tech., n.e.c.) DPT:061
GED: 5 SVP: 7 EC: 1 PA: L 4 5 6 7

Develops drawings, paintings, diagrams, cartoons and models, illustrating medical findings for use in publications, exhibits, visual aids, consultations, and in teaching and research activities:

Confers with medical and teaching personnel to determine requirements and subject treatment. Makes preliminary sketches while observing actual or recorded surgical and medical research procedures, anatomical and pathological specimens, unusual clinical disorders, magnified micro-organisms, and plant and animal tissue. Completes illustration in pen and ink, monochromatic wash, watercolour, carbon dust and mixed media. Constructs or advises on construction of three-dimensional models in plaster, wax, plastic and other materials. Devises material for visual-aids, such as animated cartoon films and film strips, preparing sequential illustrations to suggest motion or continuity.

May specialize in illustrations in a particular medical field and be designated accordingly.

3314-126 SCIENTIFIC ILLUSTRATOR(prof. & tech., n.e.c.) DPT:061
GED: 5 SVP: 6 EC: 1 PA: S 4 5 6 7

Draws illustrations and diagrams, and constructs models of scientific subjects for use in publications, exhibits, research and teaching activities, using a basic knowledge of science:

Confers with teachers, publishers and other personnel to determine requirements as to treatment of subject matter. Makes sketches, from observation, of scientific experiments and specimens, or from photographs, using artist's tools and optical instruments, such as microscope and camera lucida. Completes illustration in a variety of media and colours depending on purpose of finished work. Prepares graphs, charts and schematic diagrams and other visual aids to assist in interpreting subject matter. Assembles or advises in assembly of teaching models in materials, such as, plastic, plaster and wax.

May specialize in illustrations in a particular scientific field and be designated accordingly; for example,
Biological Illustrator

3314-130 BACKGROUND-AND-TITLE ARTIST(broadcast., motion pic. & stage) DPT:081
GED: 5 SVP: 7 EC: 1 PA: L 4 7

Draws and paints motion picture titles, sub-titles, narratives and title backgrounds:

Studies rough layout of lettering, and selects technique and media; such as, pen and ink, watercolour, pastels, scratchboard, tempera or oils, best suited to produce desired visual effect and to conform with photographic requirements. Executes finished layout on celluloid or paper, using specified type of lettering. Draws and paints scenes, patterns and layouts used as title backgrounds. Letters explanatory copy on sketches to show filming instructions. Submits sketches for approval. Renders final artwork to be photographed.

May prepare typographical lettering by phototypesetting and operate hand press to print lettering on celluloid. May compose paste-ups of titles and texts drawn or imprinted on celluloid sheets. May write original captions, titles and narrative after film is completed.

3314-134 CARTOONIST(print. & pub.) DPT:081
GED: 5 SVP: 7 EC: 1 PA: S 4 7

Creates cartoons to illustrate stories or to depict persons and events, often in caricature:

Determines subject-matter, such as illustration of a story by sequence of drawings, or humorous or satirical portrayal of a current social or political event. Sketches cartoon in pencil on cardboard or paper, and completes shading and colouring, using pens, brushes, inks, paints or pressure adhesive patterns.

May prepare captions for cartoons. May submit cartoon to editorial or engraving departments. May sketch likenesses or caricatures of prominent persons, or specialize in politics or sports and be designated accordingly; for example,
Political Cartoonist
Sketch Cartoonist
Sports Cartoonist

3314-136 LAYOUT MAN(prof. & tech., n.e.c.) DPT:081
art layout man.
GED: 4 SVP: 7 EC: 1 PA: S 4 7

Designs art layouts for use in preparing advertisements or to illustrate books, magazines and newspapers:

Studies drawings illustrations, photographs and text to be used in layout, or sketches illustrations, using clients' specifications to plan design layout. Determines portion of photographs to be reproduced, cropping extraneous elements to conserve space and obtain most desirable effect. Paints or draws comprehensive (sample of finished layout), and submits it for approval. Executes approved design, arranging drawings photographs and text in well-balanced artistic layout. Decides size and style of type to be used Marks . work sheets with explanatory legends for printing.

May retouch photographs with ink and brush. May specialize in designing advertising layouts, and be designated accordingly; for example,
Advertising Lay-Out Man

3314-140 CARTOON-BACKGROUND ARTIST(broadcast., motion pic. & stage) DPT:061
GED: 4 SVP: 7 EC: 1 PA: S 4 7

Assists in artistic creation of motion-picture-animated films: Examines sketches of cartoon characters and action sequences, evaluating them in relation to background layouts and other scenic effects, and determines colours to be used in painting scenes. Discusses with animator the effect of colour patterns and combinations to be used in scenes. Attaches colouring instructions to pictures or develops colour patterns and moods, and paints background layouts for animated cartoon scenes, using water colours, oils or ink. See also definition for term title, 02-040 ASSISTANT (any ind.).

3314-146 LETTERING ARTIST(prof. & tech., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: 1 PA: S 4 7

Paints, or draws precise lettering for advertisements, books and other printed materials: Studies order form and subject matter layout to determine nature and style of lettering required. Outlines lettering, using pencils, rulers, straight edge and curves. Draws or paints final lettering, using lettering pen and inks, or brush and paints, in a form suitable for reproduction by printing. May do involved decorative lettering for formal documents, such as diplomas, and be designated accordingly; for example, Engrosser

3315-PHOTOGRAPHERS AND CAMERAMEN

This unit group includes occupations concerned with photographing people, events, scenes, materials and products with still, motion-picture and television cameras. Activities include: conceiving artistic and special effects, arranging and preparing subject matter, and devising and setting up special photographic equipment.

Photographers

3315-110 through 3315-150

3315-110 PHOTOGRAPHER, GENERAL(prof. & tech., n.e.c.) DPT:062
GED: 4 SVP: 7 EC: B PA: L 4 5 6 7

Operates a still camera to take photographs of persons, places, merchandise and other subjects, and processes exposed film, applying knowledge of effect of light on sensitized material, camera capabilities and artistic composition: Studies requirements of particular assignment and decides on type of camera, and film. Chooses artificial-lighting accessories, such as reflecting screens or ultra-high-speed flash, if required. Transports and sets up or directs helper to set up equipment at assigned location. Selects or arranges suitable background setting and positions subject and accessories. Measures light reflectivity of subject, using photo-electric meter. Loads film in camera or film holders. Sets camera at desired angle, adjusts lens for focus, aperture for light conditions, and shutter for desired speed of exposure. Studies subject through viewfinder and adjusts camera angle to achieve appropriate artistic composition of picture. Rearranges lighting equipment, if necessary, to bring out highlights and colours. Presses button, lever or bulb to expose film, and winds film to next exposure or changes film plate. Takes exposed film to dark room, mixes chemicals, and processes film to make negatives and prints, either by hand or using processing machines.

May direct and instruct other photographers. May use lens filters, when appropriate, to alter type of light reaching film. May retouch negatives, using air brush, make enlarged prints from negatives using projector, and mount and frame prints.

3315-114 SCIENTIFIC PHOTOGRAPHER(prof. & tech., n.e.c.) DPT:060
GED: 4 SVP: 7 EC: B PA: L 4 5 6 7

Photographs plant, animal and mineral specimens to provide illustrations and visual evidence for scientific or medical publications, records, research and teaching purposes: Performs duties similar to those of 3315-110 PHOTOGRAPHER, GENERAL (prof. & tech., n.e.c.). Specializes in making still and motion pictures of patients, anatomical structures, gross and minute specimens, plant and animal tissues, and physiological and pathological processes. Utilizes basic scientific knowledge and special techniques, such as time-lapse and high-speed pictures, and ultraviolet or infra-red light to produce visible records of normally invisible phenomena involving the design and setting up of special equipment. Prepares chemicals for processing photosensitive materials to make transparencies, lantern slides, photomontages, colour prints, and enlargements, using projection technique. Designs special equipment and processing formulae. Makes copies of X-ray and similar film. May conduct research studies in the field of photography to develop new methods for the presentation of scientific data. May specialize in a particular field or technique and be designated accordingly; for example, Biological Photographer
Medical Photographer
Photomicrographer

3315-118 COMMERCIAL PHOTOGRAPHER(prof. & tech., n.e.c.) DPT:062
GED: 4 SVP: 7 EC: B PA: L 4 5 6 7

Takes photographs for commercial and industrial purposes, such as advertising and publicity: Performs duties similar to those of 3315-110 PHOTOGRAPHER, GENERAL (prof. & tech., n.e.c.). Specializes in photographing merchandise, industrial products, fashion clothes, machinery, buildings, persons and other subjects for use in advertising displays or literature, public relations, instruction-manual illustration and other commercial and industrial subjects. Confers with clients or employer to determine photographic requirements. Consults with advertising personnel, artists and other staff to arrive at desired motivational quality of photographs. Instructs models to strike poses best suited to illustrate manufacturers' products when engaged in photographing fashion clothes.

3315-122 CHIEF PHOTOGRAPHER(any ind.) DPT:138
GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Supervises and co-ordinates activities of industrial and commercial photographers: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Directs photographer in taking and developing all types of pictures, to meet company's and client's requirements. Trains and supervises darkroom technicians in processing film. Plans technical aspects of picture taking to prepare representations or publications. Develops and maintains good public relations with company's personnel and customers.

3315-126 PORTRAIT PHOTOGRAPHER(prof. & tech., n.e.c.) DPT:052
GED: 4 SVP: 7 EC: 1 PA: L 4 7

Photographs persons in studio or other location to produce pictures which faithfully represent the subject's physical features and personality: Performs duties similar to those of 3315-110 PHOTOGRAPHER, GENERAL (prof. & tech., n.e.c.). Specializes in portrait photography. Discusses customer's requirements to determine preferences, and to allow customer to become relaxed before sitting. Persuades individual to assume poses which will emphasize desirable features and subdue less attractive ones. May specialize in passport or identification photography or in photographing people at social functions. May own and operate photographic gallery or studio and be designated accordingly.

3315-130 NEWS PHOTOGRAPHER(print. & pub.) DPT:182
GED: 4 SVP: 7 EC: B PA: L 4 7

Photographs newsworthy subjects and events for use in newspaper, magazines and other publications using a still camera: Performs duties similar to those of 3315-110 PHOTOGRAPHER, GENERAL (prof. & tech., n.e.c.). Specializes in travelling to locations to photograph people and events of current interest. Personally returns exposed film for processing or issues film to messengers for forwarding to headquarters.

May transmit processed film to office or other locations, using wire-photo equipment to facilitate immediate publication. May specialize in a particular news field, such as sports or international affairs and be designated accordingly.

3315-134 ANIMATION CAMERAMAN(broadcast., motion pic. & stage) DPT:262
GED: 4 SVP: 7 EC: I 6 PA: L 4 5 6 7

Operates special cameras to make single frame exposures used to produce colour or monochrome-film cartoon, graphic animation and titles:

Studies film work order, and decides on equipment and techniques needed for desired results. Places background drawing on moveable table over which camera is suspended. Positions one or more acetate sheets, on which animation or lettering has been drawn, over background, and covers drawings with glass plate. Exposes one frame of motion picture film and repeats process, using next drawing in animation sequence. Calculates exact distance animation table must be moved between exposures to achieve desired effect of motion on film, and adjusts exposure and aperture to obtain special effects such as fade-outs or fade-ins, using mathematical formulae. Advises cartoonist on suitability of colour for reproduction on various film stocks or other matters.

May prepare instructions for computer used for automatic set-up and movements of camera and animation stand, shutter and aperture settings, when working with electrically and electronically guided apparatus.

3315-138 AERIAL PHOTOGRAPHER(prof. & tech., n.e.c.) DPT:282
GED: 4 SVP: 7 EC: B 2 5 6 PA: L 4 6 7

Photographs sites from aircraft in flight for news, scientific, town planning, rural development, cartographic, economic or military purposes:

Studies plotted course on map which shows altitude and area to be covered. Calculates number of exposures and time lapses required to obtain pictures, and makes necessary camera adjustments. Determines type of film to be used, such as monochrome, colour or infra-red, and loads camera with roll of film. Secures camera to special camera mount in aircraft. Adjusts exposure time. Keeps camera level and oriented in flight path, and makes frequent adjustments.

May manually trip shutter at calculated intervals. May prepare solutions and chemicals used in developing films and printing positives. May match individual photographs for terrain maps. May plot flight course on map, indicating altitude of aircraft.

3315-142 RACETRACK-FINISH PHOTOGRAPHER(amuse. & rec.) DPT:382
GED: 3 SVP: 5 EC: I PA: L 4 7

Operates photographic equipment to take, process, and display pictures of horserace finishes at racetrack:

Mixes chemicals for exposed film and lays them out ready for instant processing. Loads film into special camera fixed at angle to view finish line of race. Adjusts aperture according to light conditions. Presses button to start electrically-operated camera as horses approach finish line, and to stop camera after last horse has passed. Quickly removes exposed film from camera and develops it manually or in developing machine. Immediately places negative in projector for viewing on screen by judges. Prints and enlarges photographs that are used in deciding winner of race when finish is close.

3315-146 STREET PHOTOGRAPHER(amuse. & rec.) DPT:654
GED: 3 SVP: 2 EC: B PA: L 4 5 7

Operates a still camera to photograph passers-by on street and persuades them to buy snapshots:

Loads camera with film, adjusts camera settings and electronic flash according to light conditions and subjects' activities. Inserts numbered card or envelope in camera slot so that identification number will be registered on film when subject is photographed. Selects subject at random, takes picture, and hands person numbered card or printed envelope containing instructions for obtaining prints. Talks to passers-by to persuade them to purchase prints or to pose for additional photographs.

May collect payment and arrange for delivery of prints. May photograph patrons in nightclubs and restaurants and be designated accordingly.

3315-150 PHOTOGRAPHER'S HELPER(misc. serv.) DPT:667
GED: 2 SVP: 3 EC: I PA: M 4 5 6

Helps photographer in taking and developing photographs:

Arranges lights and screens, positions camera at proper angle and moves objects to secure desired background for photographs as directed. Cleans and oils camera equipment, and recharges camera batteries. Threads camera manually with film preparatory to filming. Loads and unloads film magazines as directed. Helps with darkroom duties, such as mixing chemical solutions and developing films. See also definition for term title, 02-160 HELPER (any ind.).

May label photographs.

Cameramen

3315-170 through 3315-178

3315-170 CAMERAMAN, SENIOR, MOTION-PICTURE(broadcast., motion pic., & stage) DPT:138
GED: 5 SVP: 7 EC: B PA: L 4 5 6 7

Supervises and co-ordinates camera work and lighting at photographing of motion-picture scenes:

Confers with director as to details of scene to be photographed, and informs set electrician of lighting specification required to achieve desired effect. Determines type of equipment, film and lenses to be used. Orders cameraman to set up camera and gives instructions as to focus setting of lens, distance of shot, and angle of camera, comply with mood, character and technical requirements of film subject. Surveys general effect of stage setting and directs any necessary changes in set lighting. Signals cameraman to start camera and photograph scene.

May set up and operate camera to photograph scenes. May perform some or all duties of motion-picture cameramen in small establishments or small productions.

3315-172 CAMERAMAN, MOTION-PICTURE(broadcast., motion pic. & stage) DPT:062
cameraman, second.
GED: 4 SVP: 7 EC: B PA: M 4 5 6 7

Sets up and operates power-driven camera to photograph motion-picture scenes:

Confers with senior cameraman to receive instructions, such as, type of film and lenses to be used, focus setting, distance of shot, and angle of camera. Selects and attaches lens and film magazine to camera, and adjusts focus and distance settings. Views scene through view finder and makes final adjustments to camera. Starts camera and photographs scene, on receiving signal from senior cameraman. Moves camera and adjusts controls to follow action of scenes being photographed.

May operate hand-held camera to convey certain effects.

3315-174 NEWS CAMERAMAN(broadcast., motion pic. & stage) DPT:062
screen reporter.
GED: 5 SVP: 7 EC: B 6 PA: M 4 5 6 7

Operates a motion-picture camera to record newsworthy events and subjects for television or theatre presentation:

Selects type of equipment and accessories to be used according to nature of assignment. Travels to assigned locations, and sets up equipment. Adjusts controls of camera for light conditions, correct focus and other settings. Sights subject through viewfinder and starts camera. Moves camera to follow action of subject and adjusts focus or lenses as required, while maintaining balance and composition of picture. Returns exposed film personally, or sends film by messenger while remaining on scene to obtain additional coverage. May instruct assistant cameramen to move and set up equipment, or lighting technicians to obtain special lighting requirements. May operate camera in conjunction with sound equipment.

3315-178 TELEVISION CAMERAMAN(broadcast., motion pic. & stage) DPT:062
GED: 4 SVP: 7 EC: 1 PA: L 4 5 6 7

Operates television camera, in studios or outdoors, to photograph events or scenes for immediate broadcast, or for recording on videotape:

Confers with director on dramatic effects, photographic composition and mood of scenes to be televised. Prepares aligns, sets up and operates, in conjunction with other workers, the camera optical and electronic facilities to produce proper light-to-signal transfer characteristics. Prepares lenses for use and removes and stores them. Observes scenes through camera monitor, and makes scanning and other adjustments. Moves or instructs other workers to move camera, before or during operation, following directions received from director through headphones. Moves levers to alter angle or distance of shot as required, endeavouring to maintain balance and composition of picture, and to interpret director's ideas regarding dramatic presentation.

May carry and operate miniature television camera to photograph scenes which prevent use of regular equipment. May specialize in covering news events and be designated accordingly, Television-News Cameraman

3319-OCCUPATIONS IN FINE AND COMMERCIAL ART, PHOTOGRAPHY AND RELATED FIELDS, N.E.C.

This unit group includes occupations, not elsewhere classified, in fine and commercial art, photography and related fields concerned with less creative painting and decorating; laying-out graphic material; constructing three-dimensional displays; and related work such as, posing for artists and photographers, carving reproductions of artistic objects, arranging flowers, cutting out silhouettes, and making artificial flowers. Occupations concerned with processing exposed photographic film and making photographic prints are classified in unit group 9591, PHOTOGRAPHIC PROCESSING OCCUPATIONS.

Other Painters and Related Occupations, Commercial Art and Photography

3319-110 through 3319-142

3319-110 SCENERY ARTIST(broadcast., motion pic. & stage) DPT:281
GED: 4 SVP: 6 EC: B PA: L 3 4 7

Plans and paints scenery for motion-picture and television sets: Sketches preliminary outlines of scene design on surface to be painted, following suggestions or drawings of art director. Blends ingredients to make oil or water-based paints or obtains premixed paints. Paints scene, using brush or spray gun. Prepares back drops and other scenery parts for reuse by repainting surfaces with base colour. Applies paint to objects, such as furniture, fixtures, buildings and other set accessories to create illusions of age or usage. Burns wood surfaces with torch to darken or char surface.

May co-ordinate and supervise work of set painters. May specialize in treating surfaces to create illusion of age, and be designated accordingly.

Aggr

3319-114 SIGN PAINTER(bus. serv.) DPT:381
signwriter painter.

GED: 3 SVP: 7 EC: B 6 7 PA: M 2 4 7

Lays out and paints letters, figures and designs, from artist's sketch, on advertising-bulletin boards, windows, outside walls, and business signs, using layout instruments and painting equipment:

Obtains artist's sketch and determines scale for reproducing design, letter or figure. Lays out design on plastic, silk or tin to prepare stencil, or makes paper pattern, using projector, perforating tool and shading pencils. Applies pattern or stencil to sign and draws in detail. Mixes paint according to colour specifications or to match colour keys illustrated on artist's sketch. Applies paint, lacquer, or enamel to bulletin board, wall or other display, using various types of brushes and maulstick. Draws outline of letters or sign, using pounce pattern and bag to mark outline, when painting window signs. Repaints electric signs by removing sign face, cleaning off old paint and applying new lettering. Draws layout for use in silk screen printing of posters, using artist's sketch, scale drawing, projector and lay-out instruments. Cleans brushes and spray gun, using paint thinners.

May apply paint remover and scrape off paint when repainting outside signs or bulletins. May supervise setting up of swing stage or scaffolds on outside of buildings, walls or display billboards to paint designs, letters or figures. May specialize in a particular type of sign painting and be designated accordingly; for example,

Bulletin Painter

Poster Painter

Sign Painter, Maintenance

3319-118 AIRBRUSH ARTIST(prof. & tech., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: 1 PA: S 4 7

Restores damaged and faded photographs, or colours and shades drawings to simulate photographs, using airbrush:

Examines drawing or photographic print to determine colouring, shading and changes required. Cuts out masking templates (friskets) and positions them to control areas to be sprayed. Mixes ink or paint solutions according to colour specifications and spraying consistency desired. Sprays solution while manipulating airbrush, to fill in and blend missing parts of photograph, or to give depth, perspective, and tone. Builds up or changes background of photograph to block out undesirable or distracting details. Inks borders and lettering on illustrations, and paints in details, missing from photographs or obscured by colouring, using pen, brush and drafting instruments. Highlights illustrations by applying white ink or paint.

May only be concerned with restoring photograph and be designated accordingly,

Airbrush Artist, Photography

3319-122 ARTIST, POSITIVE(prof. & tech., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: 1 PA: S 4 7

Devises and paints colour schemes on prepared designs and makes transparent positives for silk-screen printing:

Mixes pigments to obtain paints of various hues. Devises and paints colour schemes on sample design with artists' brushes. Positions transparent overlays (positives) over original design and tapes both to light table. Traces design on overlay, preparing separate overlay for each colour. Opaques non-printing areas with artists' brush to prevent light transfer during photographic process.

May be designated according to product for which design is intended; for example,

Artist, Glass

Artist, Wallpaper

3319-126 PHOTOGRAPH RETOUCHER(misc. serv.) DPT:281
GED: 3 SVP: 6 EC: 1 PA: S 4 7

Retouches portrait, commercial or other photographic negatives and prints, to accentuate desirable features of subject, using pencils, or watercolours and brushes:

Examines negative or print to determine which features should be accented or minimized. Paints negative or print with retouching medium so that retouching pencil will mark glossy surface. Shades negative or print with pencil or airbrush to smooth facial contours, conceal blemishes, soften harsh highlights or emphasize desirable features. Brushes or sprays colours on print to accentuate lights and shadows and produce clear and attractive features.

May work entirely with negatives. May process film, using darkroom equipment.

3319-130 MANNEQUIN ARTIST(plastic prod.) DPT:381
mannequin cosmetician; mannequin painter.
 GED: 3 SVP: 6 EC: 1 PA: S 4 7

Paints facial and hand features on mannequins, using brushes and oil paints:

Mixes and blends oil colours to produce required shades of paint, using palette and palette knife. Paints cheeks, lips and eyebrow features on contoured, flesh-coloured face of mannequin, using knowledge of cosmetics. Paints simulated-polished fingernails and life-like coloured eyes that complement shade of mannequin's wig. Fabricates fancy eyelashes from meshlike fabric, using scissors, and glues them in place.

3319-134 COLOURIST, PHOTOGRAPHY(misc. serv.) DPT:681
 GED: 3 SVP: 6 EC: 1 PA: S 4 7

Colours photographic portraits with oil colours, as specified, to give them natural, lifelike appearance:

Dips brush in photographic colours, and applies it on face of portrait, freehand, being careful to apply appropriate amount. Applies colour to shaded spots of portrait, using fine brush, and rubs it to blend in with previously applied colour. Colours eyes to fine detail, using special camel's hair brush.

May colour scenic or other photographs, using water colours.

3319-138 INKER AND PAINTER(broadcast., motion pic. & stage) DPT:581
inker and opaquer; painter, animated cartoon.
 GED: 3 SVP: 4 EC: 1 PA: S 4 7

Traces and paints drawings on acetate sheets for production of animated cartoons:

Overlays acetate on original drawing and traces it in ink. Blends pigments to match colour samples, or selects specified premixed paints. Reverses acetate and applies coloured, opaque paints to characters and backgrounds, using artist's brushes or airbrush.

3319-142 PAINTER, HAND(cement, stone & clay) DPT:384
decorator.
 GED: 3 SVP: 3 EC: 1 PA: S 4 7

Paints decorative designs on pottery objects, using brush and pen: Sketches design on object, using pen and ink to produce an artistic effect. Paints freehand or within sketched design, using pre-mixed colours and brush.

May specialize in painting line of colour around edge of bisque or glaze ware, using potters' wheel and brush, and be designated accordingly; for example,

Liner

Graphic Lay-Out Workers 3319-162 through 3319-182

3319-162 PASTE-UP MAN(print. & pub.) DPT:381
assembler, art work.
 GED: 4 SVP: 6 EC: 1 PA: L 4 7

Arranges and mounts copy material on paper according to instructions, and photographs completed layout:

Measures and marks paper according to artist's layout, customer's instructions, or layout-man's marks, to determine position of illustrations and printed legends, using ruler and drafting instruments. Cuts copy material, such as illustrations, typed matter and various shapes of black construction paper, using knife or scissors. Attaches material on allocated space, or positions it for spot emphasis or background, using paste or adhesive tape. Prepares type headings to specified size and style, using bench type photolettering machine. Photographs illustrations directly onto paper, reducing or enlarging image, using automatic focussing studio camera. Develops and fixes photographs and headings, and dries them on heated drum. Draws in borders, blocks, leads, lines, outlines and emphasis marks, using draftsmen's tools, pen and

ink. Marks order, copy, illustrations and layout sheet with instructions. Prepares overlays for second-colour reproductions, according to artist's layout.

3319-166 COPY STYLIST(print. & pub.) DPT:384
typographer-proofer.
 GED: 4 SVP: 6 EC: 1 PA: S 4

Designates type size and face to conform with layout and allocated space of copy to be printed on advertising pages of periodicals or catalogues:

Examines copy for layout, number of words, word spacing and borders. Estimates space to be occupied in type by copy, using pica rule and agate line gauge. Marks copy for typesetting, indicating type font, leading and style of border. Forwards layout to printing department.

May file advance copy according to date scheduled. May carry matrices and metal engravings associated with copy to stereotype section for processing. May read proof and forward it to customer for approval. May advise typesetters of changes required.

3319-170 SIGN-LAYOUT MAN(bus. serv.) DPT:381
 GED: 4 SVP: 7 EC: 1 PA: L 4 7

Draws and paints smaller scale or full-sized layouts for use in the production of illuminated and non-illuminated signs:

Studies sketch or drawing and written instructions to determine effective layout, lettering and colour scheme. Draws, or traces pictorial portion of sign on paper, cardboard, metal or wooden panels, using artists' materials and drafting instruments. Completes drawing, using one or more media, such as pen, ink or paint. Marks position for prepared illustrative material or lettering on layout. Draws, traces or stencils lettering and borders, using lettering pen or brush. Writes reproduction instructions to accompany layout.

May prepare material estimates for production purposes. May transfer detail from master pattern to full-size drawing, using projector and electric pencil, stylus, or other perforating tool. May perforate outline of drawing for transfer to asbestos sheet when laying out neon signs, using stylus and powdered charcoal. May render perspective drawings of buildings and manufactured products for display or advertising purposes. May specialize in a particular aspect of sign layout and be designated accordingly; for example,

Delineator
 Poster-Layout Man
 Projection Illustrator

3319-174 LETTERING, PHOTO PROCESS(print. & pub.) DPT:384
photo-process-lettering man.
 GED: 3 SVP: 4 EC: 1 PA: L 4 7

Lays out lettering designs, for production of photographic prints used in advertising layouts, posters and publications, by one of the following methods:

1. Selects designated adhesive-tipped-lettered transparencies from files and arranges them on glass plate in straight line or predetermined design to form words.
2. Selects designated type of paper lettering and removes individual letters from alphabet sheet, securing them to cardboard background in appropriate design with adhesive tape.
3. Forms lettering on paper-board background by hand, using ink, drawing pens and brushes, set square and stencils. Passes completed design, to camera man for production of negative prints. Corrects defects in negatives, using brush and ink and returns corrected negatives to camera man for production of positive prints.

3319-178 SPACE ALLOCATOR, NEWSPAPER ADVERTISING(print. & pub.) DPT:384
 GED: 3 SVP: 4 EC: 1 PA: S 4 7

Prepares initial layout of pages for newspaper edition, showing space consumed by advertising material:

Obtains information from listing clerk to ascertain total number of lines reserved for display advertising, and from advertisement marker to ascertain total number of columns reserved for classified advertising. Reserves space for news stories, according to standard layout procedure. Estimates number of pages required to accommodate news and advertising. Assigns and marks off designated space on layout form, using ruler, according to size and position specified by advertiser, and writes advertiser's name in space assigned. Lists number of

pages and indicates material to appear on each page, such as editorials, sports or classified advertisements. Verifies accuracy of layout form against list sheet. Routes layout form to newsroom for news layout.

3319-182 STENCIL MAKER(bus. serv.) DPT:384
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Lays out and cuts stencils to specified designs for use in marking: Draws design letters and numerals on paper or board, using drawing instruments. Brushes shellac on both sides of paper to stiffen and protect it. Cuts out design letters and numerals, using knife. Constructs wooden stencil frame, using mitre box, saw and hammer. Tacks stencil on frame. May reinforce stencil frame with wire, using soldering iron. May stencil letters and numerals on products, using brush or spray gun. May repair stencils and stencil frames, using knife and hand tools.

Display Makers

3319-202 through 3319-206

3319-202 DISPLAY MAN(bus. serv.) DPT:081
display designer.
GED: 4 SVP: 6 EC: 1 PA: L 4 7

Designs, draws, shapes, paints and arranges backgrounds and other fixtures made of paper, cardboard, wallboard, plaster, canvas, wire or wood, for use in window or interior displays of merchandise: Prepares sketch or model, showing layout, colour and other features, and submits it for approval. Cuts, shapes, drapes and paints metal, paper, wood, fabric and other materials, using brush, knife, scissors and carpentry and metalworking tools to fabricate display. Sets up fabricated display in store window or other designated area. May arrange merchandise or articles to be shown on and around display.

3319-206 DIORAMA MAKER(bus. serv.) DPT:684
display maker.
GED: 3 SVP: 6 EC: 1 PA: M 4 7

Prepares and installs three-dimensional displays and decorations, with lighting effects, and frequently against a scenic background: Measures, marks, cuts out and shapes parts from various materials such as, wood, cardboard, glass, plastic or sheet metal, using hand and power tools. Assembles parts, using nails, screws, bolts and adhesives. Paints display fixtures with spray gun or brush. Installs booths, exhibits, displays, furniture and accessories according to specifications. Decorates booth or interior of building with flags, banners or lights, and makes signs with brush, pen or pencil. May construct travelling exhibits to client's specifications. May specialize in making point-of-sale displays and animated billboards or displays.

Miscellaneous Workers in Fine and Commercial Art, Photography and Related Fields

3319-226 through 3319-299

3319-226 SILHOUETTE ARTIST(prof. & tech., n.e.c.) DPT:251
GED: 4 SVP: 6 EC: B PA: L 4 7

Creates and sells silhouette portraits: Displays samples of work, engages passers-by in conversation, and demonstrates silhouette technique, to solicit business. Requests individual to pose, and observes individual to determine identifying features. Cuts freehand profile portraits of subject from dark paper, using scissors or knife. Glues silhouette on light-coloured paper or mounts it in prepared frame. May draw profile prior to cutting it. May cut profile from photograph. May use lights, adjusted to cast subject's shadow on backdrop, as an aid in viewing profile.

3319-228 CARVER, REPRODUCTION(prof. & tech., n.e.c.) DPT:681

GED: 3 SVP: 7 EC: 1 PA: L 4 7

Carves reproductions of artistic objects in wood, stone or other materials, using hand tools: Studies artistic object or sketch to determine required treatment. Selects piece or type of material according to type of object to be carved. Carves detail of object from material, using various gouges, knives and chisels. Grinds hand tools using hone and grinding wheel. May smooth and polish objects, using abrasives and rubbing compounds. May be designated according to type of material carved or artistic style reproduced; for example, Carver, Native Art Wood Carver, Reproduction

3319-230 FLORAL ARRANGER(ret. trade) DPT:654
GED: 4 SVP: 6 EC: 1 PA: L 4 5 6 7

Arranges and sells floral decorations, such as bouquets, corsages, sprays and wreaths: Suggests type of flowers, plants, floral arrangements and decorations appropriate for customers' requirements, applying knowledge of social, religious and ethnic customs. Selects natural and artificial flowers, foliage and decorative accessories; such as, ribbons, bows, vases and ceramic pieces. Assembles floral pieces, using wire, pins, tape, scissors, knife and styrofoam. Paints wreaths and sprays, using aerosol can. Discusses floral settings for special events with customers and arranges floral displays in shops, churches, homes, and banquet halls. Telegraphs or telephones florists in other communities or countries to place orders for out-of-town delivery. Verifies order information, such as delivery address, and time and place of event. Wraps or boxes flowers, plants, and small arrangements. May own and operate a florist establishment and be designated accordingly, Florist

3319-234 MODEL, ART AND PHOTOGRAPHY(misc. serv.) DPT:668
GED: 3 SVP: 3 EC: B PA: L 3 4 5 6

Poses as subject for paintings, sculptures and photographs, by performing any combination of the following duties: Discusses required poses with artist or painter and poses as directed, to express mood or represented activity of artwork. Applies special make-up to face, and styles hair to enhance appearance, considering such factors as colour, camera techniques and own facial features. Assumes and maintains facial expression and body position until directed otherwise. May specialize in modeling for fashion shows or illustrations or in modeling one part of body, such as face, hands, or feet.

3319-238 ARTIFICIAL-FLOWER MAKER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Cuts out, assembles and arranges artificial flowers, performing any combination of the following duties: Cuts out parts, such as leaves and petals, from paper, plastic, fabric or feathers, using knife, scissors, mallet and dies. Curls feathers by drawing them between knife and thumb. Operates hand press to emboss and stamp out leaves. Fastens simulated twigs or buds to fabric or paper-covered-steel wire to form branch. Wire or glues flowers, leaves and feathers to stem or branch. Glues fabric or paper-covered wire to artificial flowers for stiffness and strength. Cuts, glues and arranges flowers, feathers and foliage in styrofoam to make floral decorations or wreaths.

3319-299 OTHER OCCUPATIONS IN FINE AND COMMERCIAL ART AND PHOTOGRAPHY

This group includes artists, photographers and related workers, not elsewhere classified; for example, those who select and train models for photography, and colour pre-drawn patterns on zinc pantographic plates. Typical examples of occupational titles covered by this residual group definition are: Modelling Consultant(bus. serv.) Painter, Plate(print. & pub.)

333-OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS

This minor group includes occupations concerned with producing, directing, staging and acting in motion picture, broadcast and theatrical productions; composing, adapting, conducting and performing musical works and dances; making broadcast announcements; performing a variety of amusing, mystifying and spectacular acts for the entertainment of audiences. Occupations primarily concerned with teaching the skills necessary for such performances are classified in Major Group 27, TEACHING AND RELATED OCCUPATIONS. OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS are classified in the following unit groups:

- 3330** Producers and Directors, Performing and
Audiovisual Arts
- 3332** Musicians
- 3333** Choreographers and Dancers
- 3335** Actors
- 3337** Radio and Television Announcers
- 3339** Occupations in Performing and
Audiovisual Arts, n.e.c.

3330-PRODUCERS AND DIRECTORS, PERFORMING AND AUDIOVISUAL ARTS

This unit group includes occupations concerned with producing and directing theatrical performances, motion picture productions and radio and television programs for entertainment, information and instruction.

Producers and Related Occupations
3330-110 through 3330-130

- 3330-110 PRODUCER, MOTION PICTURE**(broadcast., motion pic. & stage) **DPT:118**
 GED: 6 SVP: 8 EC: B PA: L 5 6 7

Plans, organizes and co-ordinates production of motion pictures: Reviews scripts and selects those suitable for presentation. Directs personnel adapting scripts for filming, using artistic and commercial judgement to reach a specific audience. Prepares production budget and maintains expenditures within budgetary limits. Selects director and key production personnel, such as cameramen, sound mixers and location business manager. Determines treatment and scope of production and establishes schedules. Conducts auditions and selects cast in consultation with director. Co-ordinates production and suggests or approves changes in script or presentation. Reviews takes filmed each day and orders retakes in cases of technical shortcomings or artistic deviations. Works closely and continually with director to ensure quality of production and to maintain schedules. Conducts meetings with director, writers and other staff members to discuss and resolve production problems and to evaluate progress and results. Approves final editing of filmed productions. May direct motion pictures.

- 3330-114 PRODUCER, STAGE**(broadcast., motion pic. & stage) **DPT:118**
 GED: 6 SVP: 8 EC: I PA: L 5 6 7

Selects play for stage performance, arranges finances, and plans, organizes and co-ordinates production of theatrical presentation: Considers and selects material on basis of plot, timeliness, audience appeal and quality of writing, and plans production. Sells shares to investors to finance production. Formulates business management policies in consultation with administrators. Prepares production budget and maintains expenditures within budget limits. Engages director and key production staff. Determines treatment, scope and scheduling of production and explains general requirements to director. Outlines production to writers, reviews and approves scripts and suggests changes to meet management and production require-

ments. Selects cast, costumes, props, music and other production personnel and equipment in consultation with director. Instructs director to schedule and conduct rehearsals and to develop details to obtain desired production. Co-ordinates elements of production to ensure quality and to maintain production schedules. Reviews production prior to presentation to ensure objectives are attained. May direct theatrical presentations. May produce shows for special occasions, such as fund-raising events and industrial shows.

- 3330-118 PRODUCER, BROADCASTING**(broadcast., motion pic. & stage) **DPT:118**
 GED: 5 SVP: 8 EC: I PA: L 5 6 7

Plans, organizes and co-ordinates production of radio or television programs: Reviews and selects suitable material and plans program. Prepares production budget and maintains expenditure within budget limits. Determines treatment, scope and scheduling of production and explains general requirements to director. Engages script writers and outlines program requirements. Reviews and approves scripts and suggests changes to meet management and production requirements. Selects cast, costumes, props, music and other production personnel and equipment in consultation with director. Co-ordinates elements of production; such as, audio, music, scenes, timing, camera work and script to ensure quality of production and maintenance of schedules. Instructs director to schedule and conduct rehearsals and to develop details to obtain desired production. Reviews and approves production prior to broadcasting to ensure objectives are attained. May direct television and radio programs. May specialize in particular medium of presentation and be designated accordingly; for example, Producer, Radio
 Producer, Television

- 3330-122 TECHNICAL PRODUCER**(broadcast., motion pic. & stage) **DPT:138**
 GED: 5 SVP: 8 EC: B PA: L 4 5 6 7

Plans and organizes required technical facilities and supervises and co-ordinates activities of studio and control-room technicians to ensure technical quality of pictures and sound for radio or television programs: Studies script to determine technical treatment. Attends production meetings to discuss program content, set locations, stage directions and technical production requirements. Conducts on-location surveys to establish technical production facilities requirements. Recommends to producer the purchase or improvement of audiovisual equipment. Plans and arranges for special effects requested by producer. Assigns tasks to technicians engaged in maintaining, operating and controlling lights, audio and video control equipment, microphones and cameras. Observes television picture through monitor to evaluate shading and

composition and instructs video operator and cameramen to adjust equipment for desired technical quality.

3330-126 PROGRAM CO-ORDINATOR, BROADCASTING(broadcast., motion pic. & stage)
DPT:118

GED: 5 SVP: 7 EC: 1 PA: S 5 6

Plans, organizes, directs and co-ordinates, through subordinate supervisors, program department of radio or television station, by performing any combination of the following duties:

Prepares and submits budget, and administers approved budget for department. Selects types of programs to be presented and content of each program. Evaluates programs to ensure conformance to network policy. Determines length of program and liaises with other department managers to ensure adherence to production schedule of station and network. Plans and arranges production and broadcast facilities to provide on-the-spot coverage of current events. Negotiates contracts with sponsors. Negotiates purchase of films or programs from independent producers. Directs, through subordinate supervisors, personnel department activities, such as hiring and training of staff. May produce and direct programs within department. May be designated according to type of department controlled or program co-ordinated; for example,

Educational-Program Co-ordinator
International-Program Co-ordinator
Public-Affairs-Program Co-ordinator
Sports-Program Co-ordinator

3330-130 CASTING OFFICER(broadcast., motion pic. & stage)
DPT:218
director, casting.

GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Auditions and interviews performers for specific parts in motion picture, stage, radio and television productions:

Maintains talent file to include information such as, personality types, specialties, past performances and availability of performers. Views professional, amateur and foreign productions to search out and assess talent. Submits lists of suitable performers to producers and directors for final selection. Conducts screen tests and auditions to verify suitability of performers, considering factors such as, physical size and appearance, quality of voice, expressiveness and experience. Negotiates with performers and agents to obtain contractual agreement on items such as, salary, fees, program credits, residual payments, performance dates and production schedules. Scrutinizes rehearsals and presentation to evaluate dramatic talent of performers hired.

Directors and Related Occupations

3330-150 through 3330-178

3330-150 DIRECTOR, MOTION PICTURE(broadcast., motion pic. & stage)
DPT:128
GED: 6 SVP: 8 EC: B PA: L 5 6 7

Interprets script for motion picture presentation, directs and instructs cast and production personnel to achieve desired mood, treatment and style of presentation:

Studies script to determine artistic interpretation. Confers with specialists, such as producer, musical director and technical producer to develop suitable choreography, sound and lighting effects, costumes and set designs. Assists producer and casting officer in auditioning and selecting cast. Assigns parts to cast and explains desired interpretations. Schedules rehearsals and filming. Directs rehearsals and filming, criticizing the acting and suggesting changes necessary to obtain the required standard of production. Gives direction to cast between filming sequences to keep them informed of desired interpretations. Co-ordinates activities of production staff, such as sound and lighting technicians, property men and cameramen during filming sequences to ensure effective takes. Participates in evaluating rushes and suggests changes to film and sound editors.

May produce motion pictures.

3330-154 MUSICAL DIRECTOR(broadcast., motion pic. & stage)
DPT:118
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls the musical aspects of motion picture, stage or broadcasting productions:

Plans and organizes musical production to create appeal, using knowledge of language, musical habits and tastes of audience. Selects vocal and instrumental music suitable to type of production and performers. Engages composer to write theme or score for production. Auditions and hires vocal and instrumental performers. Supervises and co-ordinates activities of personnel of studio music department. Issues and reviews assignments; such as, lyric writing, vocal coaching, scoring, arranging and copying music. Engages in and supervises writing of scripts, notes and biographies pertaining to musical transcriptions. Plans, co-ordinates and directs the mixing and editing of master tapes used in musical transcriptions. Controls and approves quality of recorded material used in musical transcriptions.

May specialize in particular medium of presentation and be designated accordingly; for example,
Musical Director, International Broadcasting
Musical Director, Motion Picture
Musical Director, Stage
Musical Director, Television

3330-158 DIRECTOR, BROADCASTING(broadcast., motion pic. & stage)
DPT:128
program director.
GED: 5 SVP: 7 EC: 1 PA: L 5 6 7

Interprets script for radio or television presentations, directs and instructs cast and production personnel to achieve desired mood, treatment and style of presentation:

Studies script to determine artistic interpretation. Confers with specialists, such as producer, musical director and technical producer to develop suitable sound and lighting effects, set designs, costumes and choreography. Selects cast, or assists producer and casting officer in auditions and selections. Assembles program sequences to provide entertainment balance. Assigns parts to cast and explains desired interpretations. Directs rehearsal, filming, taping and broadcast activities. Criticizes performances, and suggests changes necessary to obtain the required standard of production. Coaches cast in delivery of dramatic lines and in rendition of vocal and instrumental music. Co-ordinates activities of production staff such as, sound and light technicians, property men and cameramen to ensure effective presentation. Establishes pace of program and verifies timing.

May specialize in particular medium or type of program; for example,
Director, Current Affairs
Director, Radio
Director, Television

3330-162 DIRECTOR, STAGE(broadcast., motion pic. & stage)
DPT:128
GED: 5 SVP: 7 EC: 1 PA: L 5 6 7

Interprets play script for stage presentation, directs and instructs cast and production personnel to achieve desired mood, treatment and style of presentation:

Studies script to determine artistic interpretation. Confers with specialists, such as producer, writer and musical director, to develop suitability of script, costumes, scenery designs, choreography, and sound and lighting effects. Selects cast, or assists producer and casting officer in auditions and selections. Assigns parts to cast and explains desired interpretations. Schedules and directs rehearsals to obtain the required performance standard. Instructs and criticizes performers in interpretation of script until roles are mastered. Co-ordinates activities of production staff, such as property men and sound and lighting technicians to ensure effective presentation.

May pass responsibility for routine management of daily stage performance to stage manager when production is ready for indefinite run.

3330-166 STAGE MANAGER(broadcast., motion pic. & stage)
DPT:137
GED: 5 SVP: 7 EC: 1 PA: L 4 5 6 7

Plans, organizes, supervises and co-ordinates activities of stage crew in the production and presentation of theatrical performances:

Confers with production and directing personnel concerning produc-

tion requirements. Arranges conference time for cast and crew, and disseminates general information about production. Calls performers at specified intervals before curtain time. Reads annotated script during each performance and gives cues for curtain, lights, properties and sound effects, using cue cards or head-phones. Interprets stage-set diagrams to determine layout. Supervises stage crew engaged in placing scenery and properties during performance. Devises emergency substitutes for stage equipment or properties.

May assume responsibility for routine management of daily stage performance when production is ready for indefinite run.

3330-170 ART DIRECTOR(broadcast., motion pic. & stage) DPT:138

GED: 5 SVP: 7 EC: B PA: L 4 5 6 7

Plans, organizes, directs and controls the artistic aspects of motion picture, stage or broadcasting productions:

Reads books, script or scenario concerning work to be performed to determine theme and setting. Reviews relevant literature such as encyclopedias, books and catalogues; visits museums and art galleries; and delves into archives to obtain knowledge of history and culture of the setting. Plans decor and selects costumes, furnishings, props and artifacts for aesthetic appeal and realistic portrayal of the setting. Directs the placing of items on set to permit free movement of cast and to provide a clear view to audience or camera. Supervises and coordinates activities of art department personnel to achieve harmonious overall artistic presentation.

May prepare sketches, scale drawings or models of sets and scenes using artistic materials. May specialize in a particular medium of presentation and be designated accordingly; for example,

Art Director, Motion Picture

Art Director, Stage

Art Director, Television

3330-174 FILM EDITOR(broadcast., motion pic. & stage) DPT:164

GED: 5 SVP: 7 EC: I PA: L 4 5 6 7

Edits visual aspects of motion picture films:

Views film to analyze, evaluate and select scenes in terms of story continuity and dramatic and entertainment value, using equipment, such as viewers, movieolas (miniature audio and video reproducing equipment) and projectors. Trims film segments to specified lengths, using scissors and hand splicers. Selects stock shots from film library, as called for by script, and edits and incorporates them into film. Arranges film segments in sequence that presents story with maximum effect to highlight mood, pace and climax of film. Confers with other production and directing personnel concerning all aspects of motion picture film editing. Reviews assembled film on screen in concert with producer and/or director, and edits accordingly.

May edit specific type of film presentation and be designated accordingly; for example,

Newsreel Editor

Scientific-Film Editor

3330-178 RECORDING DIRECTOR(amuse. & rec.) DPT:118

GED: 4 SVP: 7 EC: I PA: L 4 5 6

Plans, co-ordinates and directs production of master musical recordings:

Selects music for production of records and tapes, employing knowledge of tastes and trends in music. Auditions and selects recording artists most appropriate for each recording, employing knowledge of vocal and instrumental techniques and requirements, and using tape recorder as verification aid. Negotiates contractual agreements between artist or agent, and recording company concerning time and place of recording, expense accounts, commissions and royalties. Directs artists and technicians during rehearsals and recording sessions to obtain the desired presentation. Times recording to ensure length of rendition meets recording time specifications. Attends company selection committee meetings to evaluate and select records and tapes for mass production on basis of potential market value. Arranges guest appearances with broadcasting personalities to promote sale of records and tapes.

3332-MUSICIANS

This unit group includes occupations concerned with creating and writing musical compositions; adapting, arranging or copying music; conducting instrumental or vocal performances; playing musical instruments; and singing as soloists or members of vocal groups. Occupations primarily concerned with teaching music are classified in Major Group 27, TEACHING AND RELATED OCCUPATIONS.

3332-110 ORCHESTRA CONDUCTOR(amuse. & rec.)

DPT:021

maestro.

GED: 6 SVP: 9 EC: I PA: L 4 5 6

Conducts instrumental groups such as symphony orchestra and large band:

Auditions and selects members of group. Selects music to accommodate talents and abilities of group, and to suit type of performance to be given. Assigns instrumental parts to individual musicians. Positions musicians in group to obtain balance and harmony of instruments. Memorizes or familiarizes himself with complete musical score. Conducts rehearsals, instructing instrumentalists concerning rendition required, and endeavouring to make optimum use of each instrumentalist's talents. Conducts performance, controlling factors such as, balance, rhythm, dynamics and entries of particular instruments, to create effect consistent with own interpretation of score.

May arrange and orchestrate score. May play instrument and act as soloist.

3332-114 COMPOSER(amuse. & rec.)

DPT:081

GED: 6 SVP: 9 EC: I PA: S 4 5 6

Creates and writes musical compositions:

Invents melodic, harmonic and rhythmic structures to express ideas and emotions in musical form such as, symphony, opera, film and play scores. Applies knowledge or understanding of harmony, counterpoint, orchestration and musical forms. Translates composition into standard musical signs and symbols on scored music paper. Plays musical instrument to assist in composing.

May specialize in one type of music or in compositions for particular instruments. May write words to accompany music. May engage in other musical activities; such as, conducting orchestra, playing instruments, singing, and teaching music.

3332-118 ARRANGER(amuse. & rec.)

DPT:081

adapter.

GED: 6 SVP: 8 EC: I PA: S 4 6 7

Transcribes musical compositions or melodic lines to adapt and modify them or create particular style for orchestra, band, choral group or individual:

Familiarizes self with composition to be adapted, using musical instrument. Imagines effects of various combination of instruments, voices, harmonic structures, rhythms, tempos and music dynamics. Selects instruments or voices to be employed to obtain desired style and effect, using knowledge of their range, characteristics, limitations and key, as well as talents of individual performers. Annotates original composition according to selection or writes arrangement on scored music papers.

3332-122 ORCHESTRATOR(amuse. & rec.)

DPT:081

GED: 6 SVP: 8 EC: I PA: S 4 5 6 7

Writes score from arranged composition, for orchestra, band, choral group or individual, changing music from one medium to another:

Transposes from one instrument or voice to another to accommodate particular instrumentation or make-up of group, using knowledge of range, characteristics, limitations and key of instrument or voice. Improves dynamics, tempo and harmonic effects, using knowledge of music theory, harmony, form, shading and notation. Copies parts from score for individual performers within group. Plays musical instrument to plan harmony and chords.

3332-126 CHOIRMASTER(amuse. & rec.) DPT:028
choral director.
 GED: 5 SVP: 8 EC: 1 PA: L 4 5 6

Conducts vocal groups, such as choirs and glee clubs: Auditions and selects members of group. Selects music to accommodate talents and abilities of group, and to suit type of performance to be given. Studies composition and imagines effect of various combinations of voices. Assigns vocal parts to individual singers. Directs group at rehearsals and performances to achieve desired effects, such as tonal and harmonic balance, dynamics, rhythms, tempos, and shadings, utilizing knowledge of conducting techniques, music theory and harmony, and characteristics, range, and individual talents of voices. May schedule tours and performances. May adapt musical compositions to create a particular style for choral group. May conduct group and accompanying orchestra. May play musical instrument.

3332-128 CARILLONNEUR(amuse. & rec.) DPT:041
 GED: 5 SVP: 8 EC: 1 S PA: L 4 6 7.

Selects, arranges and plays music on carillon to provide regular recitals or concerts for special occasions: Selects music according to the occasion and taste of listeners. Arranges selections for carillon, using knowledge of music theory and technical capabilities of instrument. Strikes appropriate keys on keyboard using clenched fists and depresses foot-pedals to play carillon, sliding back and forth on bench as required to reach notes. Moderates pressure with which notes are struck to control volume and clarity of bells, and sustains sound of high-pitched bells by striking several times in succession. Starts foot-pedal action in advance of hand keys to ensure large and small bells speak together. Adjusts turnbuckles to control distances between bells and clappers. Supervises maintenance of carillon mechanism and bells. May compose music for special occasions. May be designated accordingly to position held; for example, Dominion Carillonneur

3332-130 MUSICIAN, INSTRUMENTAL(amuse. & rec.) DPT:141
instrumentalist.
 GED: 5 SVP: 8 EC: B 5 PA: L 4 5 6 7

Plays one or more instruments in recital, in accompaniment, or as member of orchestra, band, or other musical group to entertain: Studies and rehearses score prior to performance. Plays music from score or by memory, manipulating keys, bow, valves, strings, percussion devices, or depressing pedals, depending on instrument played. May improvise, transpose, compose, or arrange music. May specialize in particular instrument or service performed and be designated accordingly; for example, Accompanist
 Horn Player
 Organist
 Pianist
 Violinist

3332-134 CONCERT SINGER(amuse. & rec.) DPT:148
 GED: 5 SVP: 8 EC: 1 PA: L 5 6

Sings classical, operatic, or church music in musical programs: Studies and rehearses words and music for performance as soloist or member of vocal ensemble, using sheet music and libretto. Sings music such as lieder, arias and cantatas, combining musical training, expression and quality of voice with histrionic ability. Watches conductor or accompanist for directions during rehearsal or performance. May be known according to voice range or singing specialty and be designated accordingly; for example, Baritone
 Lieder Singer
 Recitalist
 Soprano
 Vocal Soloist

3332-138 POPULAR SINGER(amuse. & rec.) DPT:148
musical entertainer.
 GED: 4 SVP: 7 EC: 1 PA: L 4 5

Sings songs in popular idiom to entertain audiences: Studies and rehearses music and special arrangements prior to performance. Entertains in a group or individually on stage, radio, and television, projecting forms of expression in voice, such as pathos and whimsicality, using own phrasing and special musical arrangements to achieve individual style of vocal delivery. May accompany self on musical instrument. May perform musical specialty by exhibiting other skills, such as whistling, dancing or telling humorous stories. May be designated according to singing style, material, or specialty performed; for example, Blues Singer
 Folk Singer
 Song and Dance Man

3332-142 COPYIST(amuse. & rec.) DPT:388
 GED: 4 SVP: 7 EC: 1 PA: S 4 7

Copies and compiles parts from musical score for individual performers within musical group: Studies musical score to determine treatment. Transcribes parts from score onto staff-paper for each instrument or voice within musical group, utilizing knowledge of musical notation and experience. May transpose score to different key prior to copying individual musical parts.

3332-199 OTHER MUSICIANS

This group includes musicians, not elsewhere classified; for example, those who compose or play electronic music, and compose instrumental and vocal music in the popular idiom. A typical example of an occupational title covered by this residual group definition is: Composer, Popular Music(amuse. & rec.)

3333-CHOREOGRAPHERS AND DANCERS

This unit group includes occupations concerned with composing and performing dances. Activities include: creating dances and instructing dancers in their performance; performing dances as a soloist, with a partner or as a member of a dancing group. Occupations primarily concerned with teaching dancing are classified in Major Group 27, TEACHING AND RELATED OCCUPATIONS.

3333-110 CHOREOGRAPHER(broadcast., motion pic. & stage) DPT:028
 GED: 5 SVP: 8 EC: 1 PA: L 2 3 4 5 6 7

Creates original dances for stage, television, motion picture or nightclub productions, and instructs dancers in their interpretation and performance: Studies production factors such as, musical score, story or theme, and consults with production personnel concerning the interpretation required. Creates dances designed to harmonize with music and subject, illustrate unfolding of story, interpret emotion or complement musical show. Plans and records required movements of dancers, using standard notation symbols. Conducts rehearsals of dances, demonstrating movements required and instructing dancers in desired interpretation. May perform dances. May plan and arrange movements of performers and extras in pageants or other outdoor spectacles. May direct and stage dance presentation. May specialize in ballet, dances for musical shows or revues or other types of dancing presentations and be designated accordingly.

3333-114 DANCER(amuse. & rec.) DPT:048
 GED: 4 SVP: 7 EC: 1 PA: M 2 3 4 5 7

Performs dances as soloist, with partner, or as member of group to entertain audiences: Executes regular dance exercises to maintain required physical condition of body and limbs and control of movements. Rehearses dances

under direction and instruction, or develops own interpretation. Attends wardrobe fittings to ensure proper costuming. Performs classical, modern or acrobatic dances for audience entertainment, coordinating body movements and facial expressions usually with musical accompaniment, endeavouring to interpret the dance as rehearsed.

May sing and provide other forms of entertainment. May compose own dances. May specialize in particular style or type of dancing and be designated accordingly; for example,

Ballet Dancer
Chorus Dancer
Tap Dancer

3335-ACTORS

This unit group includes occupations concerned with playing parts in productions for stage, television, radio, motion-pictures, and other settings, to entertain and educate audiences. Includes occupations concerned with telling stories, performing ventriloquism and presenting humorous routines.

3335-110 ACTOR(amuse. & rec.) **DPT:048**
GED: 5 SVP: 7 EC: 1 PA: L 5 6

Portrays roles in dramatic productions for theatre, motion-picture, radio, television or other audiences:

Studies play or production to gain understanding of part. Learns lines and cues, and rehearses part, interpreting role by speech and gesture as directed. Attends wardrobe fittings to ensure proper costume fit. Acts part in medium of presentation, endeavouring to interpret role as developed in rehearsals.

May specialize in particular type of role or medium of presentation, and be designated accordingly; for example,

Actor-Dancer
Dramatic Reader
Juvenile
Motion-Picture Actor
Story Teller

3335-114 MIME(amuse. & rec.) **DPT:048**
GED: 5 SVP: 7 EC: 1 PA: L 4

Portrays role in pantomime, using mimic gestures, usually without words, to entertain audiences:

Studies story-line or character sketch to gain understanding of part. Rehearses serious, humorous or burlesqued interpretations and dramatic actions, using body movements, facial expressions and gestures. Attends costume fittings and make-up sessions to achieve desired appearance. Acts part in performance, endeavouring to interpret role as developed in rehearsals.

3335-118 VENTRILOQUIST(amuse. & rec.) **DPT:044**
GED: 4 SVP: 7 EC: 1 PA: L 4 5

Utters sounds to entertain audience, using art of ventriloquism:

Speaks or utters sound in such a manner that the voices appear to come from sources other than speaker's vocal chords. Makes use of dummy, hand puppet or other objects as foil to conduct apparent dialogue. Manipulates dummy or puppet during humorous or burlesqued performance to give illusion of voice and movement.

3335-122 COMEDIAN(amuse. & rec.) **DPT:048**
GED: 4 SVP: 6 EC: 1 PA: L 5

Performs humorously to entertain audience:

Tells jokes, delivers comic lines, sings humorous songs, and performs comedy dances and acts to make audience laugh. Wears funny costumes, contorts face or resorts to similar antics to amuse audience.

May do amusing impersonations. May specialize in particular medium of presentation and be designated accordingly.

3335-126 IMPERSONATOR(amuse. & rec.) **DPT:048**
GED: 4 SVP: 6 EC: 1 PA: L 4 5

Impersonates persons or things to entertain audience:

Represents in bodily form, or plays part of another person, type of person, animal or inanimate object. Imitates mannerisms, form, expression, dress, voice or sound of character or thing impersonated.

May present exaggerated imitations, ridiculing and making sport of character imitated, and be designated accordingly; for example, Mimic

3337-RADIO AND TELEVISION ANNOUNCERS

This unit group includes occupations concerned with announcing radio or television programs; preparing, reading and commenting on news, sports and other broadcast events; and giving commentaries on public address systems at sporting and entertainment events. Radio and television broadcast writers and editors are classified in Unit Group 3353, WRITERS AND EDITORS: RADIO, TELEVISION, THEATRE AND MOTION PICTURES.

3337-110 ANNOUNCER-PRODUCER INTERNATIONAL SERVICE(broadcast., motion pic. & stage) **DPT:134**
GED: 5 SVP: 7 EC: B PA: L 4 5 6 7

Plans, organizes, produces and announces foreign language broadcasts to inform, educate, and entertain foreign audiences by performing any combination of the following duties:

Consults with representatives of diplomatic, governmental, ethnic, and news organizations to arrange programs. Conducts live, or taped interviews for radio broadcast. Writes script and news copy. Voices dramatic programs for live or recorded presentation, using sound equipment. Gives cues to control room to ensure connected stations receive intended program. Identifies station, using call letters. Announces program in language of country to which program is broadcast. Reads news items and describes public events. Supervises activities of program assistants and radio performers. Operates control board or sound equipment. Maintains program log.

3337-114 ANNOUNCER(broadcast., motion pic. & stage) **DPT:144**
GED: 5 SVP: 7 EC: B PA: L 4 5 6

Introduces various types of programs, interviews guests, acts as master-of-ceremonies, reads news bulletins and makes other announcements for radio and television broadcasting by performing any combination of the following duties:

Identifies station using call letters. Gives cues to control room to ensure affiliated stations receive intended program. Reads prepared news bulletins and makes special announcements. Reads advertisements at specified times on sponsored programs. Conducts interviews with persons of interest and acts as master-of-ceremonies for certain programs. Broadcasts events of unusual interest that originate outside the studio such as, rallies, demonstrations, parades, greeting of notables and on-the-street interviews. Observes, evaluates and broadcasts weather, traffic conditions, and related information, from air or land vehicle, as a public service feature. Narrates explanatory comments, as directed, to accompany action parts of motion-picture, radio or television presentations. Operates control board or recording equipment. Sells advertising time. Writes scripts and news copy. Maintains program log.

3337-118 SPORTS ANNOUNCER(broadcast., motion pic. & stage) **DPT:144**
GED: 5 SVP: 6 EC: B PA: L 5 6 7

Broadcasts sports news, events and information over radio and television:

Appraises sports news and information available through sources; such as, wire service, press conference and interview. Travels to scene of sports event and collects all available information concerning assignment through observation, interview and investigation. Writes script on basis of timeliness and likely audience interest. Reads script on television or radio sportscast. Broadcasts running commentary or

play-by-play description of sports event, inserting biographical and statistical data, to inform and entertain audience. Interviews sports or public personalities at sports events or in studio for live or taped broadcast.

May perform other announcing duties, such as making special announcements and selling advertising time.

3337-122 MASTER OF CEREMONIES(amuse. & rec.; broadcast., motion pic. & stage) DPT:348
GED: 5 SVP: 6 EC: B PA: L 5 6

Introduces entertainers, speakers or celebrities to audience and generally conducts proceedings of show or program:

Addresses audience to open show or program. Introduces entertainers, speakers or celebrities, interspersing introductions with humorous stories and biographical sketches, using written notes and microphone. Comments on acts or events.

May arrange for particular tunes to be played on request. May announce arrival of celebrities. May tell jokes, sing, dance, play musical instrument or otherwise entertain audience between act or events.

3337-126 PUBLIC-ADDRESS ANNOUNCER(amuse. & rec.) DPT:348
GED: 4 SVP: 6 EC: B PA: L 5 6

Announces information of interest to fans at sporting or other events, using public-address system:

Reads list of participants and identifying numbers on program. Announces program changes, such as scratches, additions and substitutions. Explains decisions of officials or any part of event difficult for majority of spectators to see clearly or understand fully.

May make running commentary on event, presenting running or play-by-play description and inserting biographical data on participants to keep spectators informed and entertained. May furnish information concerning competition to scoreboard operator. May make public announcements at events, such as conventions, rallies and rodeos.

3337-130 DISK JOCKEY(broadcast., motion pic. & stage) DPT:347
GED: 4 SVP: 5 EC: I PA: L 4 5 6

Announces program of musical recordings, commenting on the music and other matters of interest to entertain and inform radio audience, broadcasting from studio or on-location:

Maintains lists, by category, of musical recording ratings provided by popularity surveys. Selects program of recordings having appeal for specific audience. Identifies radio station by giving call letters, using microphone. Announces program of recordings, commenting on music and other matters of audience interest, such as weather, time checks, traffic conditions and public service announcements. Reads advertising copy at specified times during broadcast. Operates sound reproducing equipment, or cues technician to perform functions, as he integrates program chatter and announcements, either extemporaneously or from script, with music. Interviews guest recording artists on program to popularize and promote recordings.

May play requests or dedications. May select and play recorded music on-location for functions, such as school, club and wedding dances, and act as a master of ceremonies. May perform other announcing duties.

3339-OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS, N.E.C.

This unit group includes performing and audiovisual arts occupations, not elsewhere classified, concerned with providing production support services; such as, stage properties, costuming supervision and special effects, assisting with planning and presentation of radio and television programs; training and presenting animals; performing mystifying, humorous, provocative, thrilling and other acts to entertain audiences. Make-up artists are classified in Unit Group 6143, BARBERS, HAIRDRESSERS AND RELATED OCCUPATIONS. Radio and Television Broadcasting Equipment Operators, Sound Recording and Reproduction Equipment

Operators and Motion Picture Projectionists are classified in Minor Group 955, ELECTRONIC AND RELATED COMMUNICATIONS EQUIPMENT OPERATING OCCUPATIONS, N.E.C.

Production Support Personnel 3339-110 through 3339-138

3339-110 PROPERTY MASTER(broadcast., motion pic. & stage.) DPT:138
foreman, stage-property.
GED: 4 SVP: 7 EC: B PA: L 5 6 7

Supervises and co-ordinates activities of personnel engaged in obtaining, moving, fabricating and storing properties used in motion picture or theatrical productions:

Reads script and confers with production and directing personnel to determine prop requirements. Studies period styles to correctly represent time of plot, consulting period files and utilizing knowledge of historical, geographical and artistic factors. Requisitions properties required from studio prop room. Arranges for construction, purchase and rental of properties not available from existing inventory. Arranges for placing properties on stage and directs clearing of properties at conclusion of each scene. Ensures that properties are in good repair. Arranges transportation of properties to outside location when required.

May arrange for special wardrobe items or setting-up special effects, such as smoke or fire. May maintain picture identification file of properties in inventory.

3339-114 WARDROBE SUPERVISOR(broadcast., motion pic. & stage) DPT:138
GED: 4 SVP: 7 EC: I PA: S 5 6 7

Supervises and co-ordinates costuming of cast for motion picture, television and stage productions:

Confers with directing and production personnel, and analyzes script and research material, to determine style of dress for cast according to period and characters to be represented. Prepares and issues requisitions and work orders for procurement, production and care of costumes and wardrobe accessories. Supervises and co-ordinates activities of workers engaged in procuring, making, altering and caring for costumes and other wardrobe accessories.

May sketch and design costumes and other wardrobe accessories.

3339-116 SPECIAL-EFFECTS MAN(broadcast., motion pic. & stage) DPT:281
GED: 4 SVP: 7 EC: B 6 7 PA: L 2 3 4 6 7

Designs, fabricates and uses devices to simulate special sound and visual effects for broadcasting, motion picture and stage productions:

Contrives and uses a variety of mechanical, chemical and electrical devices to animate incidents. Creates the illusion of phenomena; such as, snow, rain, smoke, waves, thunder and impact of projectiles, using chemicals and explosives. Draws plans for and arranges provision of contrivances; such as, towers, conveyors and wiring layouts for the setup of special-effects. Obtains permits for use of special-effects devices and ensures compliance with safety regulations.

3339-118 CHIEF-STAGE ELECTRICIAN(broadcast., motion pic. & stage) DPT:338
sight-effects man.
GED: 4 SVP: 7 EC: I PA: M 4 5 7

Provides lighting and sight effects for theatrical stages and motion picture sets:

Studies continuity script and work drawings of stage and studio sets showing light details and special sight effects desired. Originates designs for artistic lighting of sets based on extensive knowledge of stage lighting and sight presentation. Confers with producing personnel and suggests changes in lighting plans. Supervises crew engaged in setting up and arranging electrical equipment for use on stage and motion picture sets.

May direct maintenance and repair lighting equipment.

3339-120 LIGHT TECHNICIAN(broadcast., motion pic. & stage) DPT:361
set-electrician.
 GED: 4 SVP: 7 EC: B PA: M 2 4 5

Positions, sets-up, and operates various lighting equipment used to illuminate set or studio during stage performance, television broadcasting or photographing motion picture scenes:
 Studies script and confers with production personnel and chief electrician to determine lighting effects required. Co-ordinates activities with electrical crew in erecting metal scaffolding to support lighting equipment. Selects and positions equipment, such as spotlights and flood-lights, manually or using hoist. Arranges cables into groups and connects conduits to source of electricity supply, using portable junction boxes. Operates lights during filming or broadcasting, following cue sheet or script. Varies intensity of light, using silk, spun glass, or gelatin diffusion disks over lens of light source. Maintains and repairs lighting equipment.
 May arrange for transportation of lighting equipment to remote locations.

3339-122 PROGRAM PLANNER, MUSIC(broadcast., motion pic. & stage) DPT:367
musical-program director.
 GED: 4 SVP: 7 EC: I PA: S 4 5 6

Selects and arranges program of music to meet time and content requirements for specified broadcast:
 Consults with production personnel to determine type of music desired. Selects and integrates music within time and program requirements. Contacts recording companies and music publishers to become acquainted with current ratings and public preferences. Listens to recordings using audio recorder to select and program music for use in broadcasts. Maintains musical library for documentation and research.
 May verify copyright clearance for music to be used on broadcasts.

3339-126 PRODUCTION MAN(broadcast., motion pic. & stage) DPT:367
production assistant.
 GED: 4 SVP: 6 EC: B PA: L 4 5 6 7

Aids producing personnel in staging rehearsals and presenting television programs:
 Oversees distribution of studio equipment, such as scenery, cameras, and microphone placement, according to staging or floor plan. Transmits instructions received over telephone headset to performers and others on set, and gives cues, using hand signals. Directs production of sound effects. Times broadcast duration, using stop watch.
 May prepare rehearsal schedules and arrange for rehearsal halls. May attend production meetings on program content and requirements.

3339-130 SCRIPT ASSISTANT(broadcast., motion pic. & stage) DPT:367
 GED: 4 SVP: 6 EC: B PA: S 4 5 6 7

Performs any combination of following or similar duties as directed by producer in the rehearsal and broadcasting of television programs:
 Distributes copies of script and arranges for rehearsal quarters. Examines script and prepares list of props required. Prepares and distributes rehearsal call sheets, and amended scripts for members of cast and crew to insure proper timing of program. Times and records duration of individual scenes and overall program, using stop-watch. Prompts members of cast and guests from script during rehearsals or broadcast. Verifies placement of props, films, slides, title cards, and similar items prior to broadcast. Contacts members of cast and guests to insure that they have been made up. Gives directions to personnel in rehearsal and broadcast of sign-ons and sign-offs, station breaks, and film feature programs, using oral and hand signals.
 May keep rehearsal attendance records.

3339-134 FIREWORKS MAN(amuse. & rec.; explosives) DPT:664
 GED: 3 SVP: 3 EC: O 5 PA: M 4 5

Assembles and sets off fireworks displays at fairs, expositions or celebrations, according to diagrams:
 Advises committee of the distance audience should be from set-off site of display, considering wind velocity, fallout of sparks and types of fireworks used. Lays out set-off arrangement. Directs workers to set mortars apart from ground display and place barriers of sandbags or gravel to prevent sparks from detonating shells. Assembles framework and affixes display to framework, using equipment, such as hand tools, glue and twine. Connects fuses to electric squib, twisting together manually to stagger or co-ordinate time of firing. Determines appropriate time for firing display, considering darkness and humidity. Depresses button on electric squib, or ignites lead fuses, using portfire, to fire display.

3339-138 STAGE HAND(broadcast., motion pic. & stage) DPT:684
grip man.
 GED: 2 SVP: 3 EC: B PA: H 2 4

Moves stage equipment, and builds temporary structures to accommodate equipment, following directions of foreman:
 Transports and positions equipment, such as cameras, electrical fixtures and props, on stage or motion picture set, using dolly or handtruck. Erects structures from stock scaffolding, using hand tools.

Miscellaneous Performers, Entertainers and Related Occupations 3339-158 through 3339-199

3339-158 HORSE TRAINER, DRESSAGE-AND-STUNT DPT:127
 (amuse. & rec.)
 GED: 4 SVP: 7 EC: B PA: L 2 4 5

Trains horses to execute complex manoeuvres in response to directions:
 Evaluates ability and performance of each horse and devises most appropriate training program. Familiarizes horses with riding equipment, such as bridles and saddles, and with training devices, such as ropes and jumps. Exercises and works out horses to condition them for competition, exhibition and performance. Trains and directs horses to perform tricks for entertainment of audiences and to compete in horse shows. Trains horses in art of dressage, repeating training routine until horse responds to barely perceptible movements of rider's hands, legs and weight. Trains horses for specific styles of riding, such as English and Western. Supervises workers engaged in grooming, feeding, exercising and general care of horses.

3339-162 CLOWN(amuse. & rec.) DPT:047
 GED: 4 SVP: 6 EC: B PA: L 2 3 4 5 6

Performs amusing antics and tricks to entertain audience:
 Dresses in traditional clown costume and make-up or other bizarre or amusing style. Performs original or stock comedy routines, such as amusing antics, acrobatics and tricks.
 May tell funny stories, perform with animals, and participate in slapstick comedy sketches, caricaturizing other performers, well-known persons or events.

3339-166 MAGICIAN(amuse. & rec.) DPT:144
prestidigitator.
 GED: 4 SVP: 6 EC: I PA: L 4 5 7

Performs acts of illusion and sleight-of-hand to entertain audiences:
 Performs original and stock conjuring and other tricks of illusion to mystify audience, using a variety of objects; such as, rope, handkerchiefs, hoops and small animals. Performs sleight-of-hand tricks, using props, such as playing cards and cigarettes. Involves members of audience in act, and removes valuables, such as jewellery and wallets from their person without their knowledge. Talks extemporaneously to divert attention of audience when performing tricks.
 May use an assistant to perform illusory acts.

3339-170 PUPPETEER(amuse. & rec.) DPT:144
marionette man.
GED: 4 SVP: 6 EC: 1 PA: L 4 5 6

Creates puppet program and manipulates puppets to animate them for entertainment of audience, performing any combination of the following duties:

Creates original routines and dialogue or adapts stock presentation. Carves, shapes or sews puppet parts from materials; such as, wood, plaster, papier mache and cloth. Assembles puppets, using wire, string and hand tools. Sews articles of clothing and dresses puppets in appropriate costumes. Manipulates bar to which puppet-control strings or wires are attached, from position above or below stage, to direct movement of puppets during performance. Inserts hand into puppet and manipulates to produce animation. Talks or sings during performance to give illusion of voice to puppets.

3339-174 MARINE-MAMMAL TRAINER(amuse. & rec.) DPT:227
GED: 4 SVP: 6 EC: B 4 PA: L 3 4 5

Trains and directs marine mammals; such as, seals, porpoises, sea lions and whales, to perform tricks for entertainment of audience:

Observes mammal to evaluate its training potential. Devises and conducts training programs best suited to mammal. Studies and rehearses specific signals to develop desired behaviour and rapport with mammals for public performance. Teaches selected mammals to perform desired tricks; such as, leaping vertically out of water, retrieving objects, balancing objects, playing various adaptations of ball games, and rendering musical numbers by singing, blowing horns or beating drums.

3339-178 DOG TRAINER(amuse. & rec.) DPT:227
GED: 4 SVP: 5 EC: B PA: L 4 5

Trains dogs to perform tricks for entertainment of audiences:

Evaluates characteristics of each breed or individual dog to devise the most appropriate training program. Familiarizes dogs with training devices. Trains dogs to perform duties or tricks in response to oral direction, using slip chain and leash. Rehearses dog to perform according to script and oral direction. Directs dogs to perform in entertainment field; such as, stage or circus ring, motion picture and television.

May train dogs for activities; such as, racing, hunting and tracking, guarding persons and property and leading blind persons.

3339-182 ASTROLOGER(amuse. & rec.) DPT:368
GED: 4 SVP: 5 EC: 1 PA: S 5 6

Charts and interprets significance of stellar and planetary positions on horoscope to forecast future events and trends for particular client or general public:

Charts horoscope showing relative position of planets and stars to each other, to signs of zodiac and to twelve Houses of Heaven at specified times and places. Interprets significance of horoscope, predicts probability of success or failure in specified courses of action by client, and recommends propitious dates for pursuit of particular objectives.

May prepare general forecasts for regular publications.

3339-186 STUNT RIDER(amuse. & rec.) DPT:647
GED: 3 SVP: 6 EC: B PA: M 2 3 4 7

Performs acrobatic stunts or feats of equestrian skill and daring to entertain audiences or compete for prize money:

Devises acrobatic routines to be performed on horseback. Trains horse to achieve regularity in variable gaits and speeds. Rehearses program with and without horse. Performs routine at public events, such as stampedes and exhibitions.

3339-190 STAMPEDE PERFORMER(amuse. & rec.) DPT:647
rodeo performer.
GED: 3 SVP: 6 EC: B PA: H 2 3 4 6 7

Performs feats of skill and daring at stampede (rodeo) to compete for prize money and to entertain audience:

Mounts bronco or brahma bull in chute and attempts to remain mounted on bucking animal for specified time when animal is released from chute, demonstrating riding skill and daring. Ropes calf while riding horse, using a lariat, dismounts and wrestles calf to ground, and tethers calf's legs together to immobilize. Rides horse after running steer, jumps from horse, grabs steer by horns and bulldogs to ground. Rides as outrider in chuck-wagon race spectacle. Drives team of horses in chuck-wagon, or chariot race. Performs rope tricks, mounted or dismounted, using lariats.

3339-194 DIVER(amuse. & rec.) DPT:647
GED: 3 SVP: 3 EC: B 4 PA: M 2 4 5 7

Feeds, identifies, and describes fish enclosed in aquarium or fish tank for public amusement:

Dons wet suit and other underwater equipment and drops to floor of tank. Circulates underwater to feed fish during show periods. Identifies and briefly describes individual species being fed, using underwater sound system. Cleans bottom and windows of tank, using suction hose and scrubbing brushes. Observes and reports diseased, injured, or dead fish. Gives routine medical treatment to fish. May restock tanks with specimens of fish, crustaceans, and other organisms.

3339-199 OTHER PERFORMERS AND ENTERTAINERS

This group includes performers and entertainers, not elsewhere classified; for example, those who perform feats of hypnotism, and difficult or spectacular feats of acrobatics, gymnastics, juggling and daredevil stunts; act as double or stand-in for star; perform exotic or provocative dances; display some physical oddity; read character and perceive thoughts of others; control behaviour of animals and reptiles; and provide other forms of public entertainment. Typical examples of occupational titles covered by this residual group definition are:

Acrobat(amuse. & rec.)
Double(amuse. & rec.)
Fortune Teller(amuse. & rec.)
Graphologist(amuse. & rec.)
Hypnotist(amuse. & rec.)
Juggler(amuse. & rec.)
Phrenologist(amuse. & rec.)
Strip-Tease-Artist(amuse. & rec.)
Thrill Performer(amuse. & rec.)

335-OCCUPATIONS IN WRITING

This minor group includes occupations concerned with originating and editing written material for publication in printed form and for spoken use, broadcasting, and dramatic presentation; and translating or interpreting written or spoken words from one language to another. Includes authors, critics, columnists, editors, reporters, technical writers, script writers, continuity writers, and others engaged in preparing written material on a free-lance basis or as staff members of a publishing organization. These occupations are classified in the following unit groups:

- 3351 Writers and Editors, Publication
- 3353 Writers and Editors: Radio, Television,
Theatre and Motion Pictures
- 3355 Translators and Interpreters
- 3359 Occupations in Writing, n.e.c.

3351-WRITERS AND EDITORS, PUBLICATION

This unit group includes occupations concerned with the preparation of written material for publication in newspapers, books, magazines, technical manuals, trade journals and related publications. Activities include: searching, interviewing and writing to prepare material; selecting and revising written material; and planning, supervising and co-ordinating activities of workers.

3351-110 EDITOR, BOOK(print. & pub.) DPT:018
critic, book.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Evaluates manuscripts of books to determine suitability for publication and supervises preparation of manuscript for publication: Reviews and evaluates manuscripts of novels, biographies, collections of short stories, essays and poems, text books and other books submitted by authors and literary agents. Makes recommendations to publisher regarding acceptability of material for publication and conditions of publication contract. Suggests changes in manuscript and negotiates with author regarding details of publication, such as royalties to be paid, publication date, and number of copies to be printed, according to knowledge of production requirements and estimation of public demand for book. Edits or supervises editing of material for coherence of style and punctuation and oversees preparation of manuscript for publication. May negotiate with authors concerning contracts for future writing.

3351-114 EDITOR, ADVERTISING(bus. serv.; print & pub.) DPT:038
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Directs workers engaged in preparation of advertising material, and edits art work and copy for publication: Assigns work to advertising copy writers according to publication schedule and budget allocation. Reviews advertising copy, photographs and art work for effectiveness and accuracy of expression. Ensures conformity with advertising regulations and with company sales, credit and pricing policies, and completeness and accuracy of product specifications. Edits and directs copy rewriting by staff, or personally rewrites or re-arranges copy to improve wording and continuity. Selects and examines page lay-outs to emphasize sales presentation and to create interest and appeal. Confers or corresponds with staff members, supervisors and managers to impart or obtain information related to editing or preparation for publication. Maintains records and reference files. May edit company's employee publications, letters, handbooks, instructions and operational manuals. May instruct copy writers and advertising department staff according to company's preferred style and publication methods. May determine format, style and type of advertising according to allocation of advertising funds. May direct preparation of sample lay-outs for submission to management or clients.

3351-118 EDITOR, CITY(print. & pub.) DPT:038
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Directs gathering, selecting, and editing of local news for newspaper: Assigns reporting and photographic staff to cover various news events, acting on information received by telephone, or personal contact. Receives and rewrites, or assigns for rewriting, news copy, and edits copy for conformity with accepted rules of style and syntax, and to shorten or lengthen items to fit allocated space on newspaper pages. Relays copy to news editor or to composing room. Writes or directs writing of headlines. May hire and discharge staff. May direct gathering, writing, and publishing of news stories of regional interest and be designated accordingly; for example, Editor, Region

3351-122 EDITOR, EDITORIAL PAGE(print. & pub.) DPT:038
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and directs activities of editorial department and supervises personnel engaged in writing editorials: Selects and assigns to editorial writers, topics of timely interest,

according to writer's specialty. Selects letters, poems, and similar contributions from readers for publication. Examines editorial copy for clarity, conciseness and adherence to publication policy. Makes up editorial page by marking position and length of editorial features on dummy sheet. Writes leading editorials. Participates in conferences of editorial policy committee to recommend position to be taken by publication on specific public issues. May select editorial cartoons to illustrate position of publication on public issues or assign staff artist to prepare pertinent drawings.

3351-126 EDITOR, FINANCIAL(print. & pub.) DPT:038
business editor.
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Directs newspaper or magazine department dealing with financial and business news: Assigns reporting staff to cover business or financial news stories or to prepare feature articles. Reviews copy for publication in accordance with accepted rules of style and format. Attends press conferences, dedications of new plant sites and business structures, and business conventions or other meetings. Interviews business, government, and industrial leaders to secure information for news and feature articles. Edits news releases submitted by business firms. Analyzes, from experience, financial and stock-market transactions and projects business trends. May review press dispatches from wire services to determine use and placement of story in financial section of newspaper, basing determination on relative significance of news item. May edit copy, write headlines, and plan layout of news items in financial section of newspaper.

3351-130 EDITOR, MAGAZINE(print. & pub.) DPT:038
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Formulates editorial policy of periodical and directs activities of editorial personnel to conform with interests and tastes of readership and accepted standards of literary or journalistic expression: Selects and edits or directs editing of articles submitted by contributors. Assigns staff writers to prepare articles on subjects of interest to magazine readership by conducting interviews, and by searching reference materials. Reviews articles and recommends or makes changes according to knowledge and experience of subject, and established policy. Confers with subordinate editorial personnel to formulate editorial policy and to resolve specific issues affecting readership. Confers with art, production, circulation, and other personnel to coordinate editorial efforts with workload of supporting departments. Writes columns or special articles and editorials of concern to readership.

3351-134 EDITOR, NEWS(print. & pub.) DPT:038
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans layout of news stories for newspaper edition, according to prescribed space allocation, principles of layout, and relative significance of each story: Confers with senior management to discuss page makeup of publication as a whole. Receives notification of available column-inches of space to be allotted to news stories. Receives dummy sheet of each news page, showing portion of each column consumed by advertising matter. Edits, or assigns for editing, news copy received from each department in editorial room. Marks dummy sheet indicating position and length of each story and accompanying cuts (photographs), according to relative significance of stories and knowledge of newspaper-layout principles. Approves proofs submitted by composing room. Writes and alters headlines to fit space allotment. May select items from telegraph copy for publication.

3351-138 EDITOR, TECHNICAL PUBLICATION(print & pub.; prof. & tech., n.e.c.) DPT:038
GED: 5 SVP: 8 EC: 1 PA: S 5 6 7

Plans and directs activities of writers, illustrators and other workers, and edits technical manuals, brochures and similar publications for industrial, commercial, governmental or institutional organizations: Consults with organization officials to determine objectives of proposed publication. Consults with management to attain objectives and plans and prepares lay-out proposals. Plans staff requirements to meet publication date, and determines preparation and production procedures for gathering data and preparation of illustrations within

allotted time. Directs writers and illustrators. Edits copy for technical content, style and syntax. Specifies size, quality of paper, colours and quantity, and arranges for reproduction with printer. Edits galleys, arranges lay-out and examines proof copies for conformity with policy of organization, and directs distribution of printed material as required.

May prepare operating and financial plans for press, and public relations program, and recommend plans for approval by superiors. May supervise staff engaged in press and public relations activities, and co-ordinate such activities with those from organization's headquarters. May direct production of employee publications, company training manuals and publicity releases. May be designated according to field of specialization; for example,
Information-and-Communications Manager
Supervisor, Manuals

3351-142 EDITOR, TRADE OR TECHNICAL
JOURNAL(print. & pub.) DPT:038
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Selects, writes, and reviews material for publication, plans layout, and supervises editorial staff of publication devoted to activities of commercial or institutional organization, professional group, or field of knowledge:

Assigns and directs activities of writing staff and supporting personnel. Writes editorials and special articles, according to established editorial policy of publication. Reviews material prepared by staff or other contributors. Interviews officials, workers, or other individuals to obtain items for publication, and to verify facts regarding technical matters. Plans page layout by marking dummy pages to show position and length of articles and size of photographs. Approves final proofs, and authorizes departures from usual practices, such as use of colour printing or changes in page size.

May direct activities of production, circulation, or promotion personnel. May prepare news releases, special brochures, and similar materials relating to field of publication. May be designated according to type of publication; for example,
Editor, Employee Publication
Editor, Farm Journal

3351-146 LEXICOGRAPHER(print. & pub.; prof. & tech.,
n.e.c.) DPT:068
morphologist
GED: 5 SVP: 8 EC: I PA: S 7

Composes and edits definitions of words for publication in dictionary: Ascertains or determines the nature and scope of publication policy and style required for compilation of dictionary. Determines and defines the meaning of each word, its origin, derivation and correct use by reference to source documents and using knowledge of word origins.

May compile biographical information about persons, or descriptive material about places, or abbreviations, synonyms and antonyms, prefixes and suffixes, or terms used in a particular branch of knowledge or science. May supervise and co-ordinate activities of writers engaged in preparation of dictionary, and edit material for conformity with accepted standards and be designated accordingly,
Senior Editor, Dictionary

3351-150 CRITIC(print. & pub.) DPT:088
GED: 5 SVP: 8 EC: I PA: S 6 7

Writes critical reviews on merits of literary or artistic works, for publication in newspapers or periodicals:

Reads books, attends art exhibits, or stage, screen, and musical performances, and forms critical opinions of them based on knowledge, judgment, and experience. Writes criticisms, usually making comparisons with other works or productions, and discussing such pertinent factors as artistic motif, expression, and technique.

May be designated according to major field of interest; for example,

Art Critic
Drama Critic
Movie Critic
Music Critic

3351-154 LITERARY WRITER(prof. & tech., n.e.c.) DPT:088
author
GED: 5 SVP: 8 EC: I PA: S 7

Plans and writes literary works for publication:

Chooses own subject for theme of essay, novel, poem or other literary composition. Conducts research into subject to establish factual content, assemble background material and obtain other necessary data. Plans and organizes material and composes original manuscript. Revises work, ensuring coherence of style, proper development of theme or plot and characterization.

May specialize in a particular form of writing and be designated accordingly; for example,

Essayist
Novelist
Poet
Short-Story Writer

3351-158 EDITOR, SPORTS(print. & pub.) DPT:038
GED: 5 SVP: 7 EC: B PA: S 5 6 7

Directs sports department of newspaper:

Assigns reporting staff to obtain news coverage of sporting events and personalities. Edits copy according to established format, style, and rules of syntax. Attends games and events, and interviews sports personalities to obtain information for news stories, columns, or feature articles.

May perform promotional work for sports activities sponsored by newspaper, such as conducting benefit football or basketball games, sports car races, or other events. May prepare news and feature copy, write headlines and plan layout of news items in sports section of newspaper.

3351-162 ADVERTISING COPYWRITER(prof. & tech., n.e.c.)
DPT:068
copywriter.
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Composes written material to advertise products or services:

Discusses theme, style, and length of copy with advertiser or management to determine most suitable approach, considering advertiser's particular needs and budget and media limitations. Studies product or service to ascertain principal selling features. Plans and writes headline and text, obtaining desired effect by skillful use of words, and submits copy to editor for approval.

May specialize in particular medium, such as the press, radio or television.

3351-166 COLUMNIST(print. & pub.) DPT:068
journalist.
GED: 5 SVP: 7 EC: B PA: S 5 6 7

Writes feature column, appearing periodically in newspaper or magazine, based on personal observations and knowledge of subject matter:

Comments on events, persons, or places of social, political, athletic, or economic interest. Attends fashion shows, political, business and governmental activities, or sports, social, or other special events to obtain news items for column. Interviews celebrities or other newsworthy individuals to obtain their viewpoint and comments. Quotes and discusses letters and poems from contributors.

May write columns or articles on world affairs, international law, and similar topics of political interest. May be designated according to type of column; for example,

Fashion Columnist
Political Columnist
Society Columnist
Sports Columnist

3351-170 EDITORIAL WRITER(print. & pub.) DPT:068
GED: 5 SVP: 7 EC: I PA: S 7

Writes comments on topics of current interest to stimulate or mould public opinion in accordance with policies of publication:

Consults editor to obtain topic approval or directions. Writes articles, utilizing knowledge of subject matter supplemented by additional research in accordance with editorial policy. Specializes in one or more fields, such as fiscal matters or national, provincial or local political issues. Participates in conferences of editorial policy committee to

recommend topics and stand to be taken by publication on specific issues.

May compile articles on particular issues for publication in pamphlet format.

3351-174 REPORTER(print. & pub.) DPT:068
GED: 5 SVP: 7 EC: B PA: S 5 6 7

Collects and analyzes facts about news-worthy events by interview, investigation, or observation, and writes newspaper stories conforming to prescribed editorial techniques and format:

Reports to scene of event, as directed. Interviews persons and observes events to obtain and verify story facts, and to develop leads for future news items. Takes notes and reads publicity releases, copies of speeches or similar materials to facilitate organization and writing of story. Types or writes story, referring to reference books, newspaper files, or other authoritative sources to secure additional relevant facts that may have a bearing on the story. Refers stories to editor for approval. Receives and evaluates news reports and suggestions for future stories. Monitors police and fire radio communications to obtain news story leads.

May transmit details of news items to editorial staff, using telephone. May specialize in one type of story, such as sports events, political affairs, or police activities. May specialize in reporting stories, articles, and news items by mail, telephone, radio, or telegraph from locations distant from publishing establishment or broadcasting station, or in writing newspaper stories of humorous, interpretive, narrative, or otherwise subjective character, and be designated accordingly; for example,

Correspondent
Feature Reporter

3351-178 TECHNICAL WRITER(prof. & tech., n.e.c.) DPT:068
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Writes manuals and related technical publications concerned with the description, installation, operation, and maintenance of electronic, electrical, mechanical, and other equipment:

Acquires knowledge of product by referring to trade and technical specifications, sketches, notes, drawings, and catalogues. Verifies knowledge of product by interviewing personnel engaged in developing or improving equipment, and by observing performance of experiments and methods of production. Analyzes material and writes, in clear and concise language, draft publication. Oversees preparation of illustrative material, making rough sketches to aid artist in making final drawings, and selects photographs, drawings, sketches, diagrams, and charts. Selects, organizes, edits and revises articles, bulletins, manuals, or similar publications.

May assist in preparation and layout of work for publication. May specialize in particular technical subject and be designated accordingly; for example,

Aeronautical-Engineering Technical Writer(air & space craft.)
Chemical-Process Writer
Technical-Writer, Electrical and Electronic Products(elec. equip.)

3351-182 REWRITE MAN(print. & pub.) DPT:268
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Writes news copy for publication from written or telephoned notes supplied by reporting staff:

Reviews and organizes notes received on pertinent facts and details of news events. Writes or types lead (first) paragraph of article, and expands story, verifying or supplementing facts as necessary from newspaper files or other reference sources, or by telephoning reporters for additional details. Submits copy for editing.

May collect and analyze facts about newsworthy events by interview, investigation, or observation.

3351-186 EDITOR, TELECOMMUNICATIONS(print. & pub.) DPT:268
GED: 5 SVP: 7 EC: I PA: S 7

Selects and edits provincial, national and international news items as received by wire from press associations:

Changes copy received by wire to correct errors of spelling and punctuation, and deletes paragraphs as necessary, to fit available space. Issues selected items to departments with notations of desired length of story in accordance with predetermined space allotment. Monitors teletypewriter machines for new leads on important news items

received before press time of edition, and reserves space for copy on such items. Selects news of local events of national or international interest, and prepares copy to be forwarded to central news associations by wire. Rewrites stories to include information of special interest to subscribers of publication.

3351-190 EDITOR, COPY(print. & pub.; prof. & tech., n.e.c.) DPT:268
GED: 5 SVP: 6 EC: I PA: S 7

Edits and corrects printed proof copy to conform with established format, style, and policy of publication:

Reads copy to detect errors in spelling, construction, continuity, punctuation, and content. Verifies facts, such as birth dates of persons mentioned in news stories, by reference to newspaper files or other sources, and by discussion with writers. Marks corrections and rearrangement of story organization, using standard proofreading symbols. Writes headlines of specified size and type style to fit space allotted to individual story on copy. Attaches photographs and drawings to finished copy for preparation of printing plates.

May write or rewrite stories. May specialize in editing and correcting copy of manuscripts to be printed in book form and be designated accordingly. May supervise other workers engaged in preparing or editing copy, and be designated accordingly; for example,
Copy Chief

3351-194 EDITORIAL ASSISTANT(print. & pub.) DPT:268
GED: 5 SVP: 6 EC: I PA: S 5 6 7

Participates in editorial activities of newspaper, magazine, trade journal or other publication, and, under supervision, performs any combination of the following duties:

Edits copy for spelling, punctuation and grammatical errors according to accepted rules of style and syntax, using standard proofreaders' symbols. Verifies facts, dates, and statistics in articles from standard reference sources. Prepares layout of pages, showing position and size of all articles and illustrations according to knowledge of accepted techniques of presentation. Selects cuts (photographs and other illustrative material) and determines portion of cut to be reproduced, cropping extraneous elements to conserve space and emphasize subject of illustration. Writes columns, articles, or feature stories reflecting viewpoints of publication and characteristics of readership. Writes headlines and captions. Rewrites articles to improve consistency and clarity, and to conform to space limitations of publications.

May select unsolicited manuscripts for screening by senior editorial personnel.

3351-198 EDITOR, SPECIAL FEATURES(print. & pub.) DPT:068
GED: 4 SVP: 7 EC: B PA: S 5 6 7

Plans layout of news items, and prepares and edits copy for special newspaper supplements:

Receives and reviews instructions concerning proposed supplements. Searches files and determines details of similar supplements, as well as names of advertisers and personalities who might contribute news material. Selects names of personalities and field correspondents, and confers with them to inform them of special publication and invite comments or information. Interviews personalities to elaborate on or clarify, information supplied. Edits news material, plans layout of news items for supplement and prepares suitable headlines for news items. Writes articles, and edits articles received from correspondents for conformity with publication policies and rules of grammar. Forwards edited material to composing room to be set in type for making proofs. Reviews and corrects proofs. Selects photographs for supplement, according to availability of space, and sends photographs to engraving department to have cuts made. Sends cuts to composing room. Marks lay-out sheets to locate and indicate length of news, articles and photographs. Delivers completed lay-outs of supplement to composing room.

3351-202 DESKMAN, SPORTS(print. & pub.) DPT:268
GED: 4 SVP: 7 EC: I PA: S 5 6 7

Plans lay-out of sports pages of newspaper according to allocated space and relative significance of stories:

Reviews instructions concerning available space and amount of space to be allotted sports stories. Edits copy of sports stories to conform with available space, and writes headlines highlighting stories, using

knowledge of subject, language and size and style of type. Selects appropriate photographs from newspaper files to accompany certain stories. Marks lay-out sheets to locate and indicate length of stories and to locate photographs. Selects filler stories to complete columns, and indicates position of filler on lay-out sheets. Forwards completed lay-out sheet to composing room preparatory to publishing.

3351-206 EDITOR, MAKE-UP(print. & pub.) DPT:068
GED: 4 SVP: 6 EC: I PA: S 7

Writes undated articles of general interest for use as filler material in newspaper and magazines:

Reads source material, including press releases, travel brochures, and press-agency features to locate and select suitable articles for use as filler, utilizing knowledge of reader interest and company policy. Writes articles of varying lengths to provide wide selection of material for other editors. Rewrites headings and updates or revises outdated articles preparatory to republishing, conforming with space allotments. Gives instructions to printers concerning size and style of type to be used. Sends copy to be set up in composing room. Reviews and corrects errors and files approved setup for use as required by editors.

3351-210 EDITOR, PICTURE(print. & pub.) DPT:268
photo editor.
GED: 4 SVP: 6 EC: I PA: S 5 6 7

Examines and selects photographs to illustrate newspapers, magazines or other publications:

Examines photographs for news and photographic and pictorial value. Writes cut lines (descriptive text) to accompany each picture. Distributes pictures to appropriate departments. Makes up rotogravure section of publication by marking position and size of articles and pictures on dummy sheet. Makes assignments to news photographers to obtain photographs.

May make up picture page or sequences to present ideas or stories pictorially and be designated accordingly.

3353-WRITERS AND EDITORS: RADIO, TELEVISION, THEATRE AND MOTION PICTURES

This unit group includes occupations concerned with selecting, interpreting and editing news and other materials for information, or entertainment through radio or television broadcasting; writing and editing scripts for sketches, motion pictures, stage presentations, advertising, and broadcast programs. Radio and television announcers are classified in Unit Group 3337, RADIO AND TELEVISION ANNOUNCERS.

3353-110 EDITOR, NEWS, SPECIAL EVENTS AND PUBLIC AFFAIRS(broadcast., motion pic. & stage) DPT:038
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Supervises and co-ordinates activities of workers engaged in gathering editing and broadcasting news reports, special events and public affairs programs:

Plans and develops assignment procedures for coverage of regional, national and international news for network programs, and co-ordinates regional coverage of news events to be used nationally. Plans coverage and broadcasting of news specials and public affairs programs. Selects news topics and originates ideas for news specials, and briefs cameramen, editors and reporters on coverage plans. Decides format for programs, selecting and evaluating copy, film, video tape and graphics to be used, and organizes the recording, editing and scripting of program material. Verifies material gathered against other sources of information for accuracy, clarity, good taste and newsworthiness. Writes film scripts, news items and continuity for programs, and edits copy prepared by other editors. Monitors news programs periodically for errors in reading or production.

May specialize in a particular area and be designated accordingly; for example,

Editor, Foreign-News Broadcasting
Film and Script Editor, Television News
News Editor, Broadcasting

3353-114 EDITOR, CONTINUITY AND SCRIPT(broadcast., motion pic. & stage) DPT:038
GED: 5 SVP: 8 EC: I PA: S 5 6 7

Edits, and supervises preparation of continuity and script material for broadcasting:

Reviews, or assigns others to review scripts, stories and other material prepared by staff or free-lance writers for station or network presentation. Assesses suitability of material for broadcasting, and recommends purchase of material submitted by free-lance writers. Directs preparation of scripts to be read by announcers to introduce and connect various parts of musical, news, sports or special events programs. Edits material to ensure conformance with company policy and laws. Maintains liaison with universities, writers' groups and other organizations to extend and publicize company's interest in Canadian writers.

3353-118 NEWS ANALYST, BROADCASTING(broadcast., motion pic. & stage) DPT:068
GED: 5 SVP: 8 EC: B PA: S 5 6

Prepares comments on news and current affairs for broadcasting over radio or television:

Analyzes and evaluates news items of local, national and international significance. Conducts interviews with persons knowledgeable on or involved in events of current interest. Prepares scripts for broadcasts, interpreting the facts to give a personal assessment of their causes, consequences and likely implications.

May collect and report facts about newsworthy events at scene of special assignment or other locations distant from broadcasting station. May provide extemporaneous commentary on important public events. May specialize in a particular field of news reporting and be designated accordingly; for example,

Political Analyst
Stock-Market Analyst

3353-122 SCRIPT WRITER(broadcast., motion pic. & stage) DPT:068
GED: 5 SVP: 7 EC: I PA: S 5 6

Writes original scripts for stage plays, screenplays and broadcasts, working alone or as member of team:

Chooses own theme and subject matter, or writes on particular subject for specific occasion, as directed. Conducts research into subject matter to obtain authentic details of manners, customs and speech, characteristic of specific period, locale or race. Writes script, including dialogue, description of characters and details of scenes and settings, using knowledge of limitations and opportunities of media. Submits script to editor for approval, and discusses recommended alterations with colleagues or producer. Revises script where necessary by eliminating scenes, changing sequence or characterizations, brightening dialogue or cutting length.

May write material that is read by announcers to introduce and connect various parts of musical, news, sports and special events programs and be designated accordingly,
Continuity Writer

3353-126 WRITER, NEWS OR SCRIPT, INTERNATIONAL BROADCASTING(broadcast., motion pic. & stage) DPT:088
GED: 5 SVP: 7 EC: I PA: S

Writes news items or topical scripts in foreign language for broadcast to foreign country:

Compiles and writes news items to give listeners a resume of world affairs, with emphasis on events occurring within their own countries. Writes original scripts on topics to stimulate interest of listeners, employing knowledge of customs and tastes of foreign peoples to whom broadcasts are directed.

May announce programs in language of country to which program is broadcast and be designated accordingly,
Writer-Announcer, International Broadcasting

3353-130 SCRIPT READER(broadcast., motion pic. & stage) DPT:268
GED: 4 SVP: 6 EC: 1 PA: S 5 7

Appraises written material submitted for broadcasting for conformity with standards of good expression:
Reads book or script of radio and television programs to refine forms of language expression or to detect and recommend deletion of vulgar, immoral, libellous or misleading statements. Evaluates style and content of script and suggests changes to writer.

3353-199 OTHER WRITING AND EDITING
OCCUPATIONS: RADIO, TELEVISION,
THEATRE AND MOTION PICTURES

This group includes writers and editors, not elsewhere classified; for example, those who write texts for operas, musical plays or extended choral works by fitting words to music composed by another; write original plays, or adapt themes from fictional, historical or narrative sources for dramatic presentation; and write words to be sung or spoken to accompaniment of music. Typical examples of occupational titles covered by this residual group definition are:

Librettist(prof. & tech., n.e.c.)
Playwright(prof. & tech., n.e.c.)
Song Writer(prof. & tech., n.e.c.)

3355-TRANSLATORS AND INTERPRETERS

This unit group includes occupations concerned with interpreting the spoken word from one language into another and translating written or spoken words to one or more different languages, and includes translation of trade, technical, professional or scientific terminology.

3355-110 INTERPRETER(prof. & tech., n.e.c.) DPT:268
GED: 5 SVP: 7 EC: 1 PA: S 5 6

States orally in one language what has been stated orally in another language:

Listens to speaker, and reads from working papers or correspondence to interpret statements made, utilizing knowledge and training in logical and scientific thinking, professional, technical and cultural terminology, and a thorough understanding of the specific languages used. Restates, either simultaneously or consecutively, interpreted statements to facilitate understanding of proceedings by listeners. May be required to translate written matter into a different language, and revise translations prepared by others. May be designated according to language or languages interpreted, or kind of interpretation rendered; for example,
Interpreter, Simultaneous
Interpreter, Slavic Languages

3355-114 TRANSLATOR, SCIENTIFIC DOCUMENTS(prof. & tech., n.e.c.) DPT:288
GED: 5 SVP: 7 EC: 1 PA: S 4

Translates scientific or technical writings into another language:
Translates scientific and technical documents, texts and correspondence from one language into another, using training in logical and scientific thinking and a thorough knowledge of the languages, and of cultural, technical and professional terminology, to facilitate understanding of original document by reader.
May revise translations prepared by others, consulting dictionaries and other reference sources as required. May specialize in the subject matter of a particular science or profession, such as engineering, physics, law or medicine and be designated accordingly; for example,
Translator, Law
Translator, Medicine
Translator, Physical Sciences

3355-118 FOREIGN-BROADCAST TRANSLATOR(broadcast., motion pic. & stage) DPT:288
GED: 5 SVP: 6 EC: 1 PA: S 6

Translates and transcribes radio messages:
Translates radio messages, news and script, and transcribes texts into language and form required. Prepares replies to mail received from audience in language of senders. Records and files mail received, together with copies of replies.
May specialize in type of material translated and transcribed, and be designated accordingly; for example,
Foreign-News Translator

3355-122 TRANSLATOR(bus. serv.; prof. & tech., n.e.c.) DPT:288
GED: 5 SVP: 6 EC: 1 PA: S 4

Translates and transcribes texts into one or more languages:
Translates documents and correspondence into another specified language, using thorough knowledge of the language and specialized terminology to facilitate understanding of contents of original document by reader. Transcribes translated text, using knowledge of grammar and terms employed in business, professional, technical or trade organizations, in specified format such as memorandum, report, or letter.
May act as interpreter during conversations with visitors from abroad or during telephone calls conducted in a foreign language. May be designated according to knowledge of specific professional or technical terminology, or according to foreign language; for example,
Insurance Translator
Translator, German
Translator, Russian

3359-OCCUPATIONS IN WRITING, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with writing and editing activities for broadcasting or for publications; such as, writing humorous material for publications, reading and evaluating magazine manuscripts, writing self-instructional texts, composing crossword puzzles, and writing articles for scientific and other journals.

3359-110 HUMORIST(print. & pub.; broadcast., motion pic. & stage) DPT:068
GED: 5 SVP: 7 EC: 1 PA: S 4 5 6

Writes humorous material for publication or for oral or dramatic presentation:
Writes humorous books, articles, plays or comic sketches, using knowledge gained from observation of human behaviour, situations, and current affairs. Writes humorous dialogues, jokes, and descriptions of episodes, gestures or facial expressions to be performed by cast members to enhance entertainment or comedy in motion-pictures or radio and television productions. Discusses work with producer, cast members, or other writers and revises manuscript where necessary.
May specialize in writing particular kind of humour and be designated accordingly,
Gag Writer

3359-114 READER, FIRST(print. & pub.) DPT:288
GED: 5 SVP: 6 EC: 1 PA: S

Reads and evaluates submitted magazine manuscripts to select those suited for publication:
Reads manuscripts to evaluate their journalistic or literary merit and probable reader interest, and lists reasons for rejection or submits approved manuscripts to supervisor or subject specialist for final decision.

3359-118 PROGRAMMED-INSTRUCTION WRITER(bus. serv.; educ.) DPT:068
instructional programmer; writer, self- instruction manual.

GED: 5 SVP: 5 EC: I PA: S 5 6 7

Writes self-instructional texts and related material exploring, explaining and teaching academic, cultural, commercial or technical subjects: Reviews customer's specifications for training-program needs. Writes statement of instructional objectives and measurement criteria. Writes programmed instructions to meet objectives and criteria, utilizing knowledge of principles of psychology and learning theory, for presentation in printed text or other suitable medium. Consults with subject-matter specialists at various stages of preparation of program. Tests the program with selected learners, first with small groups, then with large groups, to establish statistical validity. Revises program after each trial until program appears to be suitable for publication.

3359-122 CROSS-WORD-PUZZLE MAKER(print. & pub.) DPT:088

GED: 4 SVP: 6 EC: I PA: S 7

Devises and composes cross-word puzzles for publication:

Draws form, setting up numbered blank squares for insertion of words and filled in squares to complete design. Fits words, whose spelling coincides vertically and horizontally, into blank areas, making use of knowledge of spelling and grammar of one or more languages. Composes short definitions numbered correspondingly to match series of blank squares. Completes puzzle for use as key to solution.

May originate puzzles for specific purposes such as advertisements or special days or events. May originate puzzles, making use of words in two languages, and be designated accordingly,

Bilingual-Puzzle Maker

3359-199 OTHER OCCUPATIONS IN WRITING

This group includes writers, not elsewhere classified; for example, those who write articles for scientific or other journals, encyclopedias and university and school texts. Typical examples of occupational titles covered by this residual group definition are:

Collaborator, Encyclopedia(print. & pub.)

Contributor, Scientific(print. & pub.)

Specialist Writer, History(prof. & tech., n.e.c.)

OCCUPATIONS IN SPORT AND RECREATION

This major group includes occupations concerned with employment for monetary gain in athletics, sports, recreation and amusement. Activities include: administering and directing athletic programs; selecting, training and managing athletes; giving instruction in professional sports; officiating at games and sporting events; participating in sports and athletics as competitor or player; and providing services directly related to athletics, sports, recreation and amusement. Occupations concerned with teaching athletics, sports and physical education in educational institutions are classified in Major Group 27, **TEACHING AND RELATED OCCUPATIONS**. Occupations concerned with the performing arts for the amusement and entertainment of audiences are classified in Minor Group 333, **OCCUPATIONS IN PERFORMING AND AUDIOVISUAL ARTS**. **OCCUPATIONS IN SPORT AND RECREATION** are classified in the following minor group:

371 Occupations in Sport and Recreation**371-OCCUPATIONS IN SPORT AND RECREATION**

This minor group includes occupations concerned with administering and directing athletic programs; managing, coaching, scouting, training and instructing athletes; observing and enforcing rules and regulations governing sporting events, athletic games and competitions; participating in sports and athletics as competitor or player; attending to the needs of persons engaged in sports and recreational activities; providing services to patrons at amusement parks, carnivals and other amusement centres; and serving as guides to hunters, mountaineers and other sportsmen. These occupations are classified in the following unit groups:

- 3710 Coaches, Trainers, Instructors and Managers,
Sport and Recreation**
- 3711 Referees and Related Officials**
- 3713 Athletes**
- 3715 Attendants, Sport and Recreation**
- 3719 Occupations in Sport and Recreation, n.e.c.**

3710-COACHES, TRAINERS, INSTRUCTORS AND MANAGERS, SPORT AND RECREATION

This unit group includes occupations concerned with administering and directing athletic programs; managing, coaching, scouting, training and instructing athletes for team sports; and training and instructing athletes and other individuals in competitive and recreational sport. Activities include: negotiating contracts with players; arranging for their participation in sports events; and giving instructions in theoretical and practical aspects of sports and recreation to individuals or groups desiring to gain sports skills or to increase physical fitness. Occupations concerned with teaching athletics, sports and physical education in educational institutions are classified in Major Group 27, **TEACHING AND RELATED OCCUPATIONS**.

3710-110 Director, Athletics(educ.) DPT:118
GED: 5 SVP: 8 EC: I PA: S 4

Directs and administers athletic activities in college or university and negotiates with other colleges or universities to co-ordinate intercollegiate sports programs; Interprets and participates in formulating extramural athletic policies. Employs and discharges coaches and other athletic department employees on own initiative or at direction of board of directors. Assumes responsibility for athletic publicity. Oversees and directs

coaches and members of coaching staff. Prepares budget estimates. Assumes responsibility for receipts and expenditures of department and for production of income, such as scheduling sports events and controlling ticket sales. Supervises physical education staff. May direct program for students of physical education.

3710-114 MANAGER, PROFESSIONAL ATHLETIC TEAM(amuse. & rec.) DPT:118
GED: 5 SVP: 8 EC: B PA: L 5

Manages, directs and controls the activities of personnel concerned with the operation of a professional athletic team and its players: Performs duties as described under master title, 01-180 **MANAGING SUPERVISOR** (any ind.). Directs and co-ordinates activities of the scouting, coaching and training staff. Discusses terms and bargains with other clubs to buy, sell or trade players. Negotiates with players regarding salary contracts, and working agreements. Employs and discharges staff members on own initiative or as instructed by board of directors. Controls team's finances, ticket sales and travel accommodations.

May manage a team engaged in a particular sport and be designated accordingly; for example,
Manager, Baseball Team
Manager, Basketball Team
Manager, Football Team
Manager, Hockey Team
Manager, Lacrosse Team

3710-118 MANAGER, ATHLETE(amuse. & rec.) DPT:118 GED: 5 SVP: 7 EC: 1 PA: L 5

Manages affairs of athletes by negotiating with promoters and other sports groups to settle business matters such as contracts, and directs training:

Negotiates with promoters or team management to obtain favourable contracts for client. Prescribes exercises, rest periods, and diet to be followed by client. Directs those concerned with the training and conditioning of client. Determines strategy to be followed by client in competition with others.

May be designated according to sport of athlete; for example,
Manager, Boxer
Manager, Wrestler

3710-122 COACH, PROFESSIONAL ATHLETIC TEAM(amuse. & rec.) DPT:128 GED: 5 SVP: 7 EC: B 5 PA: L 2 3 4 5 6 7

Coaches players by analyzing their performances, instructing them in areas of deficiency, and developing team coordination for sports events:

Observes performance of players to determine need for individual or team improvement. Coaches players individually or in groups, by demonstrating techniques of game. Oversees daily practice of players and ensures that players adhere to club's training rules during off-duty time. Plans and directs game strategy on own initiative or with other club officials. Develops play patterns, and instructs and drills players in briefing and practice sessions. Analyzes game progress and gives signals and instructions to players. Conducts after-game analyses of play, and makes changes in strategy, play patterns and player utilization and performance.

May be concerned with a particular sport and be designated accordingly; for example,
Coach, Baseball Team
Coach, Basketball Team
Coach, Football Team
Coach, Hockey Team
Coach, Lacrosse Team

3710-126 SCOUT, PROFESSIONAL SPORTS(amuse. & rec.) DPT:218 GED: 4 SVP: 8 EC: B 5 PA: L 5 6 7

Searches for talented players and evaluates their athletic skills to determine their fitness and potential for professional sports, and negotiates with them or their manager to obtain their services:

Observes prospects' performances and reviews past records. Negotiates with players or their manager to arrange contracts. Reports to management of team he represents, the results of scouting assignments, such as selection or rejection of players observed and interviewed, and persons to be considered for future recruitment.

May sign player contracts on behalf of club management. May be concerned with a particular sport and be designated accordingly; for example,

Baseball Scout
Basketball Scout
Football Scout
Hockey Scout
Lacrosse Scout

3710-130 INSTRUCTOR, PHYSICAL TRAINING(amuse. & rec.; educ.; pers. serv., n.e.c.) DPT:224 GED: 4 SVP: 7 EC: B PA: M 2 3 4 5 7

Teaches individuals or groups beginning or advanced calisthenics, gymnastics and reducing or corrective exercises, in private health club, gymnasium or outdoors:

Evaluates abilities and needs of individual by observation and interview to determine suitable training program. Teaches and demonstrates use of gymnastic apparatus, such as trampoline, mechanical exercisers, and corrective weights. Teaches manipulative skills required for sports and games. Organizes, leads, instructs, and referees games, such as volleyball, squash, and racquet ball.

May train volunteer leaders. May give massages and alcohol rubs, and assist clients receiving heat or ultraviolet treatments and hot baths.

3710-134 SWIMMING INSTRUCTOR(amuse. & rec.) DPT:224 GED: 4 SVP: 7 EC: B 4 PA: H 2 3 4 5 7

Teaches swimming and diving skills, life saving and water safety measures to individuals and groups:

Instructs beginners in swimming, usually by entering water or from deck, demonstrating correct movements, and assisting them to remain afloat. Instructs those attempting to gain proficiency in swimming or diving, orally or by demonstration. Teaches lifesaving and water safety, including safe practice with small boats.

3710-138 ATHLETIC TRAINER(amuse. & rec.) DPT:224 GED: 4 SVP: 7 EC: B PA: L 2 3 4 5 7

Instructs athletes to improve their physical fitness for participation in various sports, such as baseball, boxing, football and hockey:

Prescribes routine and corrective exercises to strengthen muscles. Recommends special diets to build up health and reduce weight. Massages parts of players' bodies to relieve soreness, strains and bruises. Renders first aid to injured persons, such as giving artificial respiration, cleaning and bandaging wounds, and applying heat and cold to promote healing.

May give heat and diathermy treatments as prescribed by health services. May be designated according to type of sport concerned; for example,

Baseball Trainer
Boxing Trainer
Football Trainer
Hockey Trainer
Lacrosse Trainer

3710-142 COACH, AMATEUR ATHLETIC TEAM(amuse. & rec.) DPT:124 GED: 4 SVP: 6 EC: B 5 PA: L 2 3 4 5 6 7

Coaches amateur players of various age groups in fundamentals and rules of competitive sports:

Forms groups into competing units. Demonstrates techniques of play. Drills members of group in fundamentals until they are familiar with and adept in all phases of game, giving particular attention to physical conditioning. Plans and directs game strategy on own initiative or with other club officials. Develops play patterns, and instructs and drills players in briefing and practice sessions. Analyzes game progress and gives signals and instructions to players. Conducts other-game analysis of play, and makes changes in strategy, play patterns and player utilization and performance.

May purchase and maintain athletic equipment. May coach a particular sport and be designated accordingly; for example,
Coach, Junior Hockey

3710-146 GOLF PROFESSIONAL(amuse. & rec.) DPT:224 GED: 3 SVP: 7 EC: B PA: L 2 3 4 5 6 7

Instructs novices and players to improve their skill in playing golf: Describes and demonstrates correct techniques to new and experienced golfers to improve their golfing skill. Organizes and conducts tournaments for club members. Purchases, displays, and sells golf equipment. Maintains records of receipts and expenditures.

May represent golf club as player in various tournaments. May advise on construction and maintenance of golf course.

3710-150 SKI INSTRUCTOR(amuse. & rec.) DPT:224 GED: 4 SVP: 6 EC: O PA: M 2 3 4 5 6 7

Instructs and demonstrates techniques of skiing to individuals or groups:

Explains and demonstrates skiing techniques, such as walking, turning, stopping, bending knees, balancing body while on skis, and down-hill techniques. Demonstrates physical exercises required to maintain physical fitness. Recommends appropriate ski equipment and wearing apparel to individuals. Explains safety measures to follow while skiing. Observes persons to detect mistakes and recommends techniques to correct errors.

May participate in skiing demonstrations, ski racing, and jumping competitions. May sell skis and equipment.

3710-154 JUDO INSTRUCTOR(amuse. & rec.) DPT:224
ju-jitsu instructor; karate instructor.
GED: 3 SVP: 6 EC: I 6 PA: H 2 3 4 5 7

Teaches individual and group classes in judo, ju-jitsu, karate or other methods of self-defence:

Lectures on history and purpose of self-defence technique. Explains and demonstrates use of basic anatomical knowledge to exploit weak parts of adversary's body. Explains and illustrates principles of leverage, foot action, and body movement. Conducts classes ranging from basic level of skill and knowledge to highly advanced stage of proficiency.

May participate in competition to demonstrate self-defence.

3710-158 INSTRUCTOR, ICE SKATING(amuse. & rec.) DPT:224
GED: 3 SVP: 6 EC: B PA: L 2 3 4 5 6 7

Instructs individuals or groups in techniques of ice skating:

Instructs by demonstration and oral presentation, the techniques of body balance and skating strokes.

May participate in and organize exhibitions of figure, dance, and free skating. May sell skating equipment.

3710-162 RIDING INSTRUCTOR(amuse. & rec.) DPT:224
GED: 3 SVP: 6 EC: O PA: H 2 3 4 5 7

Instructs pupils in techniques of horsemanship:

Teaches pupils how to mount horse and how to post. Explains and demonstrates methods of controlling horse's actions in walking, trotting, cantering, pacing, and other gaits. Instructs pupils how to saddle and groom horse.

May drill advanced pupils in the art of jumping and in horsemanship competitions.

3710-166 INSTRUCTOR, BOWLING(amuse. & rec.) DPT:224
GED: 3 SVP: 5 EC: I PA: M 2 3 4 5 7

Instructs individuals or groups of persons how to bowl by explaining and demonstrating techniques and methods of bowling:

Explains and demonstrates various approaches, fingering, wrist action, and follow-through techniques of bowling. Observes students during practice bowling to detect their mistakes. Informs them of mistakes and of action required to correct them. Recommends type and weight of bowling ball to use. Explains bowling rules and regulations and method of keeping score.

May sell bowling equipment, such as shoes, gloves and balls.

3710-199 OTHER COACHES, TRAINERS, INSTRUCTORS AND MANAGERS, SPORTS AND RECREATION

This group includes sports and recreation coaches, trainers, instructors and managers, not elsewhere classified; for example, those who hire and train caddies, and specialize in gymnastic apparatus exercises. Typical examples of occupational titles covered by this residual group definition are:

Caddie Master(amuse. & rec.)

Gymnastics Instructor(amuse. & rec.)

3711-REFEREES AND RELATED OFFICIALS

This unit group includes occupations concerned with observing and enforcing rules and regulations governing sporting events, athletic games and competitions. Activities include: refereeing; keeping scores and other records; judging performances and determining results; and verifying credentials of persons or animals engaged in sports and other special events.

3711-110 STEWARD, RACETRACK(amuse. & rec.) DPT:118
GED: 5 SVP: 7 EC: I PA: S 5 6 7

Co-ordinates activities of racetrack personnel and negotiates with other racetrack officials and provincial racing commission to interpret and enforce racing rules and regulations as member of board of stewards:

Supervises all employees of track engaged in conducting horse races. Approves or disapproves requests for equipment changes on horses by owners and trainers. Orders removal of unfit horses from race. Observes entry of horses into starting gate to ensure that each horse gets a fair start from gate. Determines jointly, with other track officials, violations of racing rules and penalties to be assessed in accordance with provincial racing commission. Directs claiming of horses when owners use them for betting on races. Alternates duties with other members on board of stewards.

May be engaged in a particular activity and be designated accordingly; for example,
Commission Steward
Presiding Steward
Steward-at-Start

3711-114 REFEREE(amuse. & rec.) DPT:268
umpire.
GED: 4 SVP: 7 EC: B 5 PA: L 2 3 4 5 7

Officiates at sporting events, such as baseball, basketball or football games and boxing or wrestling matches to maintain standard of play and to assess penalties:

Officiates at sporting events and observes actions of participants in events to detect infractions of rules, such as tripping or fouling opposing players, and makes final decisions on disputable matters according to established regulations. Consults with opposing teams or players when required. Assesses penalties to player or team for infractions of rules. Starts and stops game, as required, using hand or arm signals or by blowing whistle.

May be concerned only with determining validity of goals, or out-of-bound plays, and be designated accordingly; for example,
Goal Judge
Linesman

3711-118 RACING SECRETARY AND HANDICAPPER(amuse. & rec.) DPT:288
GED: 4 SVP: 7 EC: I PA: S 7

Analyzes past performances of horses to assign handicap allowances and to arrange races among horses of comparative speed and ability:

Analyzes records, class (breeding), and past performances of horses to determine which horses will participate during racing meet. Prepares list of horses eligible for each race. Handicaps each horse in every race by assigning weight each horse should carry, basing decision on amount of money and number of races won, age and sex of animal, distance of race, and on personal judgment acquired through experience. Registers names of persons having financial interest in horses entered in meet. Observes races to study ability and form of horses and to verify selection of entries and assignments of handicap weights.

May receive applications from owners for stabling for race meets and winter quarters, and allots stalls and tack rooms accordingly.

3711-122 PATROL JUDGE(amuse. & rec.) DPT:268
GED: 3 SVP: 6 EC: O PA: L 2 5 7

Observes running of horse races at racetrack to detect infractions of racing rules, and reports claims of fouls committed:

Observes running of race from elevated stand to detect interference between horses or actions of rider that cause his or other horses to lose chance of winning. Records name of jockey, number of horse and type of infraction. Discusses race with other judges to determine if race was run in accordance with rules. Observes motion pictures of race to determine if infraction cited or claim of foul lodged is valid. Participates as one of several judges, each of whom observes race from different locations around track. Observes horses in stretch and posts finish of first four horses crossing finish line.

3711-126 CLERK-OF-THE-COURSE(amuse. & rec.) DPT:368
GED: 3 SVP: 6 EC: B 5 PA: L 7

Compiles details of events at harness race meeting:
Records necessary entries in official records book, such as names of horses and their eligibility, certificate numbers, names of owners, names of sulky drivers and their licence numbers, charted lines at pari-mutuel meetings, amount of money won by each horse, and names of withdrawn or ruled out horses. Records time of race in minutes, seconds and fifths of seconds. Notifies owners and drivers of penalties assessed. Verifies correctness of entries in official records book.

3711-130 STARTER, HARNESS RACING(amuse. & rec.) DPT:664
GED: 3 SVP: 6 EC: O PA: L 4 5 7

Starts harness races by directing drivers to line horses up behind mobile starting-gate, and controls speed of vehicle and folding of gate:
Takes position, in rear of mobile starting-gate facing horses. Directs drivers to bring horses up behind starting-gate in proper post position, using microphone. Signals drivers to control horses as vehicle proceeds along racetrack. Gradually increases speed of vehicle by depressing accelerator, using foot. Presses button to fold gate to sides of vehicle and gives word to start race as vehicle crosses starting line. Assesses fines or issues suspensions to drivers for infractions of rules or misdemeanors while behind starting-gate. Notifies officials of misdemeanors and penalties assessed.

3711-134 PLATING INSPECTOR(amuse. & rec.) DPT:367
paddock plater.
GED: 3 SVP: 6 EC: O 6 PA: M 3 4 7

Inspects horse's hooves and plates to ensure their satisfactory condition for racing:
Inspects hooves and plates of horses at paddock prior to race to determine that hooves have been trimmed to prevent stumbling during race and to detect loose or broken plates. Records name of horse, owner and trainer, and condition of horse's hooves and plates. Reports unsatisfactory conditions to track officials for further action.

3711-138 STARTER, HORSE RACING(amuse. & rec.) DPT:268
GED: 3 SVP: 5 EC: O PA: L 5 7

Determines sequence of entry of horses into starting gate at racetrack and gives directions to jockeys and track personnel who assist in positioning horses:
Observes temperament of horses to determine sequence of entry into starting gate. Informs jockeys as to order of entry. Gives directions to track personnel to assist in positioning horses into starting gate when horses are reluctant to enter. Recommends removal of a horse from the race if it refuses to enter gate or if horse or rider is injured while entering or in starting gate. Signals riders and other track officials when ready to start race, and presses starter button that opens gate to release horses.

3711-142 PADDOCK JUDGE(amuse. & rec.) DPT:668
GED: 3 SVP: 5 EC: O PA: L 5 6 7

Inspects equipment of horses and jockeys in paddock at race track before each race to determine that equipment meets specifications printed on program:
Examines jockey's equipment and harness of racehorse and orders jockey or trainer to make changes, if needed, to meet specifications. Refers requests for changes of equipment to other track officials for approval. Orders jockeys to mount for race.
May register time of claim for horse prior to race, using registering-time clock.

3711-146 IDENTIFIER, HORSE(amuse. & rec.) DPT:688
GED: 3 SVP: 4 EC: O 6 PA: L 4 7

Verifies identification data of horses at paddock to ensure that only those horses scheduled to race are permitted to be saddled:
Examines horse for colour and markings, size, and identification number tattooed on upper lip, and compares identifying marks with

pictures and other official records. Records physical changes in horse, such as scars.

3711-150 SCOREBOARD OPERATOR(amuse. & rec.) DPT:564
GED: 3 SVP: 3 EC: B PA: S 4 5 7

Operates control panel of scoreboard to inform spectators of progress of sports event:
Observes players and officials at sports event. Manipulates indicators and pushes buttons on control panel of scoreboard to inform spectators of the progress and statistics of event, such as time, scores and penalties. Confers directly with officials to verify scores, penalties and other data as they occur.

3711-154 HORSE-RACE TIMER(amuse. & rec.) DPT:368
GED: 3 SVP: 3 EC: I PA: S 5 7

Clocks and records time required for horse leading in race to run specified distances:
Starts stopwatch as race begins, clocks (times) leading horse as it runs various fractions of race, and stops watch when leading horse crosses finish line. Records fractions and total time required to run race, number of horse crossing finish line first, number of race, and date. Compares stopwatch readings with reading of electronic timer and reports significant differences to race track officials.
May clock running times of horses during morning workouts.

3711-158 CLOCKER(amuse. & rec.) DPT:388
GED: 3 SVP: 3 EC: O PA: L 4 7

Clocks (times) racehorses at racetrack during workouts to obtain speed information:
Records each horse on track by its particular identifying marks and colour. Observes horses during workout and assigns speed rating according to distance run, time required as determined by stopwatch, and effort extended by horse and rider. Records information and submits it to track management.

3711-162 RECEIVING-BARN CUSTODIAN(amuse. & rec.) DPT:668
GED: 3 SVP: 3 EC: B PA: L 5 6 7

Verifies credentials of persons at receiving barn of racetrack, and orders horses, scheduled to race, to be brought to barn for examination:
Compares credentials of persons requesting admittance with list of names authorized. Orders handlers to bring horses to receiving barn for inspection by appropriate track officials. Notifies racing officials of horses not meeting racing requirements or not present for inspection. Issues instructions to workers cleaning stable and barn area.

3711-166 CLERK-OF-SCALES(amuse. & rec.) DPT:688
GED: 3 SVP: 3 EC: O PA: L

Weights jockeys and equipment before and after each race at racetrack to ensure that each horse carries assigned handicapped weight during running of race:
Compares scale readings against predetermined weight assignment in agreement. Computes amount of shortage, and issues additional lead-filled pads to comply with poundage requirements. Records amount of overweight for track officials' use. Reweighs jockeys and equipment after each race to ascertain if any lead from pads was lost during running of race.

3713-ATHLETES

This unit group includes occupations concerned with active participation for monetary gain, in games or sports as competitor or player. Players who are engaged mainly in giving instruction in their sport are classified in Unit Group 3710, COACHES, TRAINERS, INSTRUCTORS AND MANAGERS, SPORT AND RECREATION.

3713-110 ATHLETE(amuse. & rec.) DPT:241
professional athlete,
 GED: 3 SVP: 7 EC: B 5 6 PA: L 2 3 4 5 6 7

Participates in competitive athletic events; such as, basketball, baseball, boxing, football and hockey, for monetary gain:
 Learns rules and regulations as they apply to individual or team sport.
 Trains to develop ability in specific sport, by physical exercise and regular practice, under the direction of coach and trainer.
 May specialize in playing a particular sport and be designated accordingly; for example,
 Football Player
 Hockey Player
 Wrestler

3713-114 SULKY DRIVER(amuse. & rec.) DPT:243
 GED: 3 SVP: 6 EC: O 6 PA: L 4 5 7

Rides in horse-drawn two-wheeled sulky in competitive races:
 Participates in harness race by riding in horse-drawn sulky. Guides horse, using reins. Tightens or slackens reins to control speed of horse.
 Adheres to established rules and regulations governing harness racing.
 Exercises horse in warm-up heats prior to race.

3713-118 JOCKEY(amuse. & rec.) DPT:243
 GED: 2 SVP: 6 EC: O 6 PA: M 2 3 4 5 7

Rides horse in competitive horse-race at racetrack:
 Receives riding instructions from horse's trainer, before race. Rides horse from starting gate to finish line during race. Rides horse during morning workout to analyze ability and peculiarities of his horse to determine how he should ride in race. Discusses horse's performance with trainer, after race.

3713-122 AUTOMOBILE RACER(amuse. & rec.) DPT:243
race-car driver.
 GED: 3 SVP: 4 EC: O 5 6 7 PA: M 4 7

Operates automobile-racing car in competition races:
 Operates car over track where race is to be run to familiarize self with course. Participates in speed and elimination trial races to qualify car for race. Drives car in race. Analyzes speed and position of other cars to determine when and where to drive car to be in favourable position to win. Observes fuel, oil, and compression gauges on dashboard of car to ensure that car is operating efficiently. Watches for warning signs, such as flags or flares, that indicate an accident has occurred and drives car accordingly.
 May perform maintenance work on car. May test fuel, oil and tires under racing conditions for oil and tire companies. May perform promotional activities on radio, television and through the press for sponsors. May drive car in a particular type of race and be designated accordingly; for example,
 Demolition Driver
 Stock-Car Racer

3715-ATTENDANTS, SPORT AND RECREATION

This unit group includes occupations concerned with attending to the needs of persons engaged in sports and recreational activities, and providing facilities to patrons at amusement parks, carnivals and other amusement centres. Activities include: allocating equipment to participants of sporting events or recreational pursuits; collecting fees; providing caddying and other services to golfers; attending to the needs of prize fighters; and operating carnival rides and amusement concessions. Occupations concerned with providing personal services in service establishments are classified in Major Group 61, SERVICE OCCUPATIONS.

3715-110 PONY-RIDE OPERATOR(amuse. & rec.) DPT:323
 GED: 3 SVP: 5 EC: B 6 PA: M 3 4 5 7

Trains ponies to be ridden, sells pony rides to children, and maintains stable of ponies:
 Trains ponies to take bit, bridle and saddle, and to walk, trot, or gallop on command. Sells tickets and accepts money for rides. Explains different types of rides to parents and recommends suitable ride on basis of size and age of child. Lifts children onto ponies and fastens them to saddle, using straps, to keep them from falling. Leads pony to riding course and commands pony to walk, trot or gallop, or drives pony-drawn wagon to give children rides. Purchases ponies, feed and supplies to maintain stable of ponies. Feeds, waters and grooms ponies, or supervises workers engaged in feeding and attending ponies.

3715-114 ICEMAN, RINK(amuse. & rec.) DPT:684
ice maker.
 GED: 3 SVP: 5 EC: B PA: M 4 7

Prepares surface of rink for activities, such as ice-skating, hockey or curling:
 Sprays surface of rink, using water hose, to obtain ice layer of specified thickness. Cleans and smooths ice surface by operating machine equipped with scraper blades and water-spraying device. Maintains curling rink surface by sweeping ice surface, using brush, and pebbles ice surface by spraying fine mist of water over surface from water container carried on back.
 May paint surface of ice and appropriate lines and insignia on ice surface, using brush and sprayer. May turn valves to admit steam through floor pipes to melt ice. May clean and smooth ice surface of outdoor rink by using shovel, hand scraper and water hose. May position wood panels over ice surface to cover ice for shows, sports events or exhibits not requiring ice surface.

3715-118 ATHLETIC-EQUIPMENT CUSTODIAN(amuse. & rec.) DPT:377
 GED: 3 SVP: 4 EC: B PA: L 4 5 7

Keeps stock of new and used athletic supplies, such as balls, gloves, bats, shoes and uniforms, and issues supplies to players:
 Keeps record of supplies in stock and those issued to players. Requests additional supplies as needed. Inspects supplies in stock to detect those requiring repair or cleaning. Repairs torn or damaged supplies or sends them out to be repaired. Issues new and clean supplies to players in exchange for those that are worn or dirty. Packs and unpacks supplies for road trips and ensures that arrangements are made for their transportation. Accompanies players on trips. Modifies protective supplies, for instance, by adding additional arch supports to shoes, padding uniforms and helmets. Assists in caring for injured players as directed.
 May prepare budget estimate for supplies, and purchase supplies. May wash soiled uniforms and other supplies in automatic washer or may arrange to have them laundered.

3715-122 AMUSEMENT-CONCESSION OPERATOR(amuse. & rec.) DPT:454
 GED: 3 SVP: 3 EC: B PA: L 4 5 7

Operates an amusement concession at carnivals, amusement parks or other places of recreation:
 Attracts attention of customers by calling out type of games and entertainment available. Provides customers with game equipment, such as toss-rings, balls, darts, firearms and ammunition. Demonstrates use of game equipment. Collects money and makes change. Cleans and repairs concession booth and maintains equipment. Arranges prizes on shelves of booth.
 May assemble and dismantle booth, and store prizes and equipment. May operate a particular type of concession booth and be designated accordingly; for example,
 Games-Booth Operator
 Shooting-Gallery Operator

3715-126 BILLIARD-PARLOUR ATTENDANT(amuse. & rec.) DPT:367

pool-parlour attendant; racker.

GED: 3 SVP: 3 EC: I PA: L 4 5 7

Assigns tables to patrons in billiard parlour and collects fees: Positions pool balls on table, using triangular rack. Supplies chalk to patrons. Cleans tables, using brush. Observes patrons to safe-guard against misuse of equipment. Places cues in cue rack, after game. Collects fees from players or writes fees on slips for collection at business desk. Keeps daily balance sheet of cash received. May inspect cue tips and replace them, using knife and glue.

3715-130 ATTENDANT, RECREATIONAL FACILITY(amuse. & rec.) DPT:368

GED: 3 SVP: 3 EC: B PA: L 5 6 7

Schedules use of golf courses, tennis courts, playgrounds and other recreational facilities in accordance with private or public-park rules: Makes reservations for use of facilities by players. Schedules use of facilities to prevent players from interfering with one another. Settles disputes between groups or individual players regarding use of facilities. Enforces rules concerning dress, conduct and use of equipment. May collect fees from players. May sell golf and tennis balls, golf clubs, tennis racquets and other sports equipment. May be designated according to particular sports activity; for example, Golf-Course Starter
Playground Attendant
Tennis-Court Attendant

3715-134 BOWLING-ALLEY ATTENDANT(amuse. & rec.) DPT:368

deskman, bowling alley.

GED: 3 SVP: 3 EC: I PA: L 4 5 6 7

Attends to desk at bowling alley to receive payment for games played, and issues scoresheets, rents bowling shoes and observes players to detect misuse of equipment: Assigns bowling alleys to patrons and collects fees. Issues scoresheets and rents bowling shoes. Reserves alleys for bowling leagues or individuals. Inspects alleys and equipment to detect damage and to ensure that equipment is available. Observes patrons to ensure proper use of alleys and equipment. Records number of games played and fees collected, and keeps daily balance sheet of cash received. May assign pin setters to work station, in non-automated alley, and record their worktime.

3715-138 SKI-LIFT ATTENDANT(amuse. & rec.) DPT:465

ski-tow operator.

GED: 3 SVP: 3 EC: O PA: L 4 5 7

Tends gasoline, diesel or electrically powered ski-lift to transport skiers up slope or mountainside: Pulls levers to start, stop, and adjust speed of lifts, such as rope-tow, chair-lift, T-bar, J-bar, or cage. Collects fares or punches daily or seasonal tickets of customers. Assists passengers on and off lift. Inspects lifts and ropes or cables to detect wear or damage. May repair and maintain equipment and clear departure and arrival platforms of ice and snow.

3715-142 SECOND(amuse. & rec.) DPT:674

GED: 3 SVP: 3 EC: I PA: L 3 4

Attends to needs of boxer or wrestler before, during and after match: Sponges contestant's body with water. Gives him water to drink at proper time. Applies medications to cuts, bruises and other minor injuries. Applies and removes protective bandages to boxer's hands before and after match. Positions stool for boxer to sit on between rounds. Adjusts contestant's clothing as necessary. Gives massage to contestant after match.

3715-146 RIDE OPERATOR(amuse. & rec.) DPT:664

GED: 2 SVP: 3 EC: O PA: L 4 5

Operates or informs patrons how to operate mechanical-ride devices at amusement park or similar place of amusement, by any one of the following methods:

1. Manipulates controls by moving levers and pressing buttons to start and stop equipment, such as roller coaster, merry-go-round, or ferris wheel. 2. Gives directions to patrons, usually over microphone, regarding safety and operation of conveyance, such as midjet autos and speed boats. Turns on current to permit operation of conveyance by patron, and turns off current after allotted time. 3. Drives vehicle, such as miniature train on which persons ride, by controlling its speed. May direct or assist patrons on and off vehicle and ensure that belts, bars, or other safety devices are secure. May oil, refuel, adjust and repair equipment, using hand tools and test equipment, before opening riding equipment to patrons. May collect cash fares or tickets from patrons.

3715-150 FLOORMAN, BINGO(amuse. & rec.) DPT:467

GED: 2 SVP: 2 EC: I PA: L 4 5 6 7

Verifies winning bingo cards to award prize or pay prize money to players holding winning cards: Collects fee for participation in game and issues game cards to players. Listens for shouts or looks for waving arms of players who have winning cards. Compares numbers on card with numbers called, to verify winning cards. Gives prize or pays money to players holding winning cards.

3715-154 CADDIE(amuse. & rec.) DPT:667

GED: 2 SVP: 2 EC: O PA: H 4 5 7

Carries golf bag and clubs around golf course for player, and hands club to player as requested: Locates driven balls. Holds marker in or out of cup, as requested, while players putt. Replaces torn divot from fairway, tamping it in place with foot. Rakes sand in bunkers to smooth surface. Cleans clubs with cloth after each shot. Cleans balls, using ball cleaner or cloth. May advise on selection of appropriate club for stroke, or concerning peculiarities of course.

3715-158 DRIVE-IN THEATRE ATTENDANT(amuse. & rec.) DPT:667

GED: 2 SVP: 2 EC: O PA: L 4 5 7

Assists patrons at drive-in theatre by performing any combination of the following duties: Stands at entrance of drive-in theatre to collect admission fees and purchases tickets for patrons. Directs patron to parking space. Patrols theatre on foot to prevent disorderly conduct, rowdiness or other infractions of rules. May watch over children in playground during intermission.

3715-162 JOCKEY VALET(amuse. & rec.) DPT:677

GED: 2 SVP: 2 EC: B PA: L 4 7

Assists jockey to prepare for race at racetrack: Inserts lead bars into saddle to ensure that rider and equipment fulfill weight requirements. Carries saddle from equipment room to paddock. Places saddle, and saddle number on horse. Assists rider to mount horse. Returns equipment to equipment room after race, and cleans room.

3715-166 RIDE ATTENDANT(amuse. & rec.) DPT:677

GED: 2 SVP: 2 EC: O PA: L 4 5 7

Assists patrons at amusement parks, carnivals and fairs to get on and off riding devices: Erects barriers in front of rides, and admits specific number of patrons. Keeps order among patrons waiting to ride device. Fastens patrons' safety belts or bars to prevent injuries during ride. Assists children and elderly patrons on and off rides. Directs patrons from unloading platform to park grounds. May collect tickets or cash fares. May clean and polish equipment and perform minor maintenance work, such as replacing light bulbs.

3715-170 GOLF-RANGE ATTENDANT(amuse. & rec.) DPT:684

GED: 2 SVP: 2 EC: B PA: L 3 4 7

Retrieves golf balls and cleans and washes golf balls and clubs at driving range:

Picks up golf balls from fairway by hand, or drives vehicle equipped with trailer that automatically picks up balls as it moves over fairway. Cleans golf balls by immersing them in revolving tumbler filled with soapy water to remove dirt, grass stains, and club marks. Removes and rinses washed balls. Applies cleaner, and buffs heads and shafts of golf clubs, using cloth or buffing wheel. Replaces golf balls in buckets and golf clubs in racks for use by driving range patrons.

3715-199 OTHER ATTENDANTS, SPORT AND RECREATION

This group includes sport and recreation attendants, not elsewhere classified; for example, those who set up pins in a bowling alley and store and issue items, such as baseballs and bats, and riding silks and saddles. Typical examples of occupational titles covered by this residual group definition are:

Bat Boy(amuse. & rec.)

Coloursman(amuse. & rec.)

Pin Setter(amuse. & rec.)

3719-OCCUPATIONS IN SPORT AND RECREATION, N.E.C.

This unit group includes occupations, not elsewhere classified, in the fields of athletics, sports and recreation. Hunting, fishing and mountaineering guides are classified in this unit group. Travel and museum guides are classified in Unit Group 6144, GUIDES.

3719-110 MOUNTAIN GUIDE(amuse. & rec.) DPT:167
alpine guide.

GED: 4 SVP: 7 EC: O 6 7 PA: VH 2 3 4 5 6 7

Organizes and conducts mountain-climbing expeditions for adventurers or tourists:

Assembles camping and climbing equipment, and arranges for transportation to site of ascent, and services of medical or other personnel as required. Selects area of ascent consistent with experience and endurance of members of climbing party. Leads party to site of ascent and during climb. Gives advice and instruction to climbing novices in accepted techniques and use of equipment.

May render first-aid to injured members of party as required.

3719-114 HUNTING AND FISHING GUIDE(amuse. & rec.) DPT:364

guide.

GED: 3 SVP: 6 EC: O PA: H 2 4 5 6 7

Plans itinerary for hunting and fishing trips, and guides and transports sportsmen to hunting and fishing areas:

Plans route that will afford best camping sites and hunting and fishing areas, utilizing knowledge of countryside and habits of game sought. Explains hunting and fishing laws, and ensures that laws are obeyed. Recommends to sportsmen suitable firearms or tackle for hunting and fishing. Drives motorboat or land vehicle to transport sportsmen to hunting and fishing areas. Paddles, poles, or rows water craft to transport sportsmen up and down fishing streams or through waterfowl habitats. Rides lead pony and guides members of group on

horseback to hunting and fishing areas. Gives first-aid to members of group in emergency. Provides or arranges for use of cabins and supplies needed by sportsmen. Prepares meals for members of group. Dresses or assists in dressing game killed by sportsmen and assists in carrying game out of woods.

May feed, water and care for animals. May be designated according to type of game sought; for example,

Fishing Guide

Hunting Guide

3719-118 DUDE WRANGLER(amuse. & rec.) DPT:667

GED: 3 SVP: 5 EC: O PA: H 2 4 5

Serves patrons of dude ranch to add to their enjoyment by performing any combination of the following duties:

Saddles and unsaddles horses adjusting equipment, as required for each guest. Assists guests to mount and dismount. Plans itinerary of trips, considering wishes and preferences of guests, knowledge of terrain, and location of suitable campsites. Packs supplies and provisions for extended overnight trips. Drives or leads pack-horses. Pitches camp, prepares fire, and aids in preparing meals. Advises guests concerning suitable hunting and fishing sites. Explains applicable hunting and fishing regulations.

May entertain guests by singing, telling stories, or playing guitar or other instrument. May participate in rodeos provided by ranch management for entertainment of guests.

3719-122 JOCKEY-ROOM CUSTODIAN(amuse. & rec.) DPT:668

GED: 2 SVP: 3 EC: I PA: L 5 6 7

Ensures that jockeys scheduled to ride are present in jockey room at racetrack, and that their dress and riding equipment meet track specifications:

Notifies jockeys when to dress. Inspects dress to ensure that they have correct colours, saddle numbers, and riding equipment. Informs track officials of riders who fail to appear for race. Maintains order in jockey room. Gives directions to workers to clean jockey room.

3719-126 GOLF-COURSE RANGER(amuse. & rec.) DPT:667

GED: 2 SVP: 2 EC: O PA: L 4 5 7

Patrols golf-course to prevent unauthorized persons from using facilities and to keep play running smoothly, either walking or using golf car:

Ensures that player's registration or green-fee ticket is valid. Prevents players from entering course beyond starting tee. Advises players to speed up or slow down to alleviate crowding. Marks damaged or hazardous areas for repair, using lime marker or stake. Cautions players against tearing up turf or abusing course. Returns lost equipment to owners or to clubhouse.

May administer first-aid or summon doctor to attend injured or ill players. May keep log of daily activities. May deliver urgent message to players on course.

3719-199 OTHER OCCUPATIONS IN SPORT AND RECREATION

This group includes sports and recreation workers, not elsewhere classified; for example, those who exhort the public to attend shows; guess the weight of patrons, at amusement parks, carnivals or similar places of entertainment; and patrol horse-race track on horseback during race to add colour to event and to assist in capturing runaway horses. Typical examples of occupational titles covered by this residual group definition are:

Barker(amuse. & rec.)

Outrider(amuse. & rec.)

Weight Guesser(amuse. & rec.)

CLERICAL AND RELATED OCCUPATIONS

This major group includes occupations concerned with recording, transcribing and typing data; composing correspondence; classifying and filing publications, correspondence and similar material; organizing and recording financial and other data into accounts and quantitative records; paying and receiving money; operating office machines and electronic data-processing equipment; storing, distributing and accounting for stores of materials; receiving clients and providing information; operating telephone switchboards; distributing mail and delivering messages; and performing other clerical duties. These occupations are classified in the following minor groups:

- 411 Stenographic and Typing Occupations
- 413 Bookkeeping, Account-Recording and
Related Occupations
- 414 Office Machine and Electronic Data-
Processing Equipment Operators
- 415 Material Recording, Scheduling and
Distributing Occupations
- 416 Library, File and Correspondence Clerks
and Related Occupations
- 417 Reception, Information, Mail and Message
Distribution Occupations
- 419 Other Clerical and Related Occupations

411-STENOGRAPHIC AND TYPING OCCUPATIONS

This minor group includes occupations concerned with taking dictation, recording, transcribing and typing dictated or prepared material, and performing related clerical duties. These occupations are classified in the following unit groups:

- 4110 Supervisors, Stenographic and Typing
Occupations**
- 4111 Secretaries and Stenographers**
- 4113 Typists and Clerk-Typists**

**4110-SUPERVISORS, STENOGRAPHIC AND TYPING
OCCUPATIONS**

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of workers engaged in recording, transcribing and typing dictated or prepared material.

**4110-110 SUPERVISOR, STENOGRAPHERS AND TYPISTS
(clerical) DPT:138**

Supervises and co-ordinates activities of workers engaged in recording, transcribing and typing dictated or prepared material, and other minor clerical duties, (Unit Groups 4111 and 4113); Performs duties as described under master title, 01-250

SUPERVISOR/FOREMAN (any ind.). Assigns secretaries and stenographers to executives, department heads and other officials, to take dictation and transcribe correspondence and memoranda.

May keep a line count and analyze production records of completed work. May take dictation and type letters and reports of a confidential nature. May interview and test job applicants for stenographic and typing jobs and recommend on hiring.

4110-114 SUPERVISOR, TELETYPISTS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in transmitting or receiving messages by telex, teletype and telegraphic-typewriter, (Unit Group 4113);

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4111-SECRETARIES AND STENOGRAPHERS

This unit group includes occupations concerned with taking dictation by shorthand writing, transcribing data by typewriter from shorthand notes or dictating machine, making appointments, answering telephone calls, and performing general office duties. Corporate or executive secretaries are classified in Unit Group 1179, OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION, N.E.C.

4111-110 SECRETARY(clerical) DPT:364
secretarial stenographer.
GED: 4 SVP: 6 EC: 1 PA: S 4 5 6 7

Schedules appointments, gives information to callers, takes dictation and relieves employer of clerical work and minor administrative and business details, performing any of the following duties:
Reads and routes incoming mail. Locates and attaches appropriate file to correspondence to be answered by employer. Takes dictation in shorthand or on stenotype machine, and transcribes on typewriter from notes or voice recordings. Composes and types correspondence. Files correspondence and other records. Answers telephone and gives information to caller, or routes call to appropriate official, and places outgoing calls. Schedules appointments for employer and reminds him when they are due. Greets visitors, ascertains nature of business and conducts visitors to employer or to appropriate person. Compiles and types statistical reports. Records minutes of meetings.
May keep confidential personnel records. May arrange travel schedules and reservations. May be designated according to type of work performed; for example,
Appointments Secretary
Legal Secretary
Medical Secretary
Social Secretary

4111-114 COURT REPORTER(clerical) DPT:364
law reporter.
GED: 3 SVP: 6 EC: 1 PA: S 4 5 6 7

Makes verbatim records of proceedings by shorthand writing or using shorthand-writing machine:
Attends meetings, lectures, courts of law, parliamentary sittings and other proceedings, and makes verbatim records in rapid shorthand or using shorthand-writing machine. Reads portion of transcript during trial or other proceedings on request of judge or other official. Dictates shorthand notes to typist or into dictating machine or passes notes to stenographer for transcription.
May perform typing duties. May attend a specific type of proceeding and be designated accordingly,
Hansard Reporter

4111-118 STENOGRAPHER(clerical) DPT:384
GED: 3 SVP: 5 EC: 1 PA: S 4 6 7

Records various kinds of dictated or other matter in shorthand and makes a transcription in typewritten form:
Records in shorthand by hand or shorthand-writing machine, dictated letters or other material. Types data from shorthand notes, written drafts, recording on dictating machine or other sources, and cuts stencils. Proofreads work for typographical and grammatical errors. Assembles and files correspondence.
May perform a variety of clerical duties. May be designated by type of work performed; for example,
Legal Stenographer
Medical Stenographer
Public Stenographer

4113-TYPISTS AND CLERK-TYPISTS

This unit group includes occupations concerned with recording data by typewriter; transmitting or receiving messages by teletype; and performing general office duties most of which involve typing. Occupations concerned with transmitting and receiving messages by telegraph are classified in Unit Group 9553, TELEGRAPH OPERATORS.

4113-110 AUTOMATIC-TYPEWRITER OPERATOR (clerical) DPT:584

GED: 3 SVP: 4 EC: 1 PA: S 4 6 7

Operates one or more automatic typewriters that reproduce letters, reports and other typewritten material:
Places perforated paper roll or tape that contains message to be reproduced on machine. Inserts stationery into carriage of typewriter and starts machine. Types manually such additional information as name, address, and date on letters.
May reproduce letters composed of predesignated standard paragraphs by pushing button for each paragraph in sequence. May operate a perforating typewriter.

4113-114 TELETYPE(clerical) DPT:584
telegraphic-typewriter operator; teletype operator;
telex operator.

GED: 3 SVP: 4 EC: 1 PA: S 4 6 7

Sends and receives messages, using telegraphic-typewriter:
Turns on machine and types identifying code for station called, or acknowledges calls from other stations. Types outgoing messages when stations are connected. Reads incoming messages to detect errors, presses lever to stop transmission when messages are not clear or overlined, and types requests for clarification. Codes and decodes incoming messages, and enters date, time, and serial number on messages sent and received. Pastes message received on tape on paper forms. Keeps record of funds transferred and their disposition. Prepares entries to correspondent or branch accounts, to record transactions.
May perform other typing and clerical duties. May be designated according to trade name of equipment used.

4113-118 TRANSCRIBING-MACHINE OPERATOR (clerical) DPT:584
dictating-machine transcriber.

GED: 3 SVP: 4 EC: 1 PA: S 4 5 6 7

Transcribes letters, reports or other recorded data, using transcribing (voice reproducing) machine and typewriter:
Positions record or tape on machine spindle and sets needle on record or threads tape through machine. Depresses pedal to rotate record or tape. Turns dial to control volume, tone and speed of voice reproduction. Types message heard through earphones. Reads chart prepared by dictator to determine length of message and corrections to be made.
May tape unrecorded information such as name, address, and date. May keep file of records. May be designated according to type of machine operated.

4113-122 VARI-TYPE OPERATOR(clerical) DPT:584
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Types master copies, such as stencils, tracings, direct plates and photo-offsets on machine similar to typewriter with removable font (type) of various sizes and styles:
Determines size of type, horizontal and vertical spacing and margins based on rough draft or specific instructions. Attaches fonts to type holder and attaches gear to platen to control spacing between lines. Moves lever to control spacing between characters. Sets stops to control right margin.
May draw decorative or illustrative designs on copy. May cut out misspelled words, using razor, fasten corrected words to tape and insert them in cut out area.

4113-124 CLERK-TYPIST(clerical) DPT:364
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Performs general clerical work where majority of duties require use of typewriter:
Compiles and types reports, bills, application forms, shipping tickets and other data from clerical records. Files records and reports, posts information to records, sorts and distributes mail, answers telephone and performs similar duties.
May compute amounts of bills and accounts, using adding machine. May type on or from specialized forms.

4113-126 TYPIST(clerical) DPT:584
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Types letters, reports, statements, stencils, forms, addresses or other straight copy material from handwritten manuscript, rough draft or corrected copy:
Assembles material and proofreads for typographical and grammatical errors.

May operate transcribing machine 4113-118 TRANSCRIBING-MACHINE OPERATOR (clerical). May perform clerical work; such as, verifying titles on report forms, indexing and filing correspondence, reports and other data. May be designated according to material typed,
Statistical Typist

413-BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS

This minor group includes occupations concerned with classifying and recording information about monetary transactions or activities and transferring this data into accounts and quantitative records; paying and receiving money; performing duties of a clerical nature concerning insurance, banking, finance and real estate, and keeping statistical records. Accountants are classified in Unit Group 1171, ACCOUNTANTS AND AUDITORS AND OTHER FINANCIAL OFFICERS. BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS are classified in the following unit groups:

4130 Supervisors, Bookkeeping, Account-Recording and Related Occupations

4131 Bookkeepers and Accounting Clerks

4133 Tellers and Cashiers

4135 Insurance, Bank and Other Finance Clerks

4137 Statistical Clerks

4139 Bookkeeping, Accounting-Recording and Related

Occupations, n.e.c.

4130-SUPERVISORS, BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of workers engaged in classifying and recording information about transactions or activities, interpreting this data into accounts and quantitative records, and paying and receiving money.

4130-110 SUPERVISOR, BOOKKEEPERS AND ACCOUNTING CLERKS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in computing, classifying, posting and recording data to keep sets of accounts and other financial records, (Unit Group 4131):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with a particular bookkeeping or accounting activity and be designated accordingly; for example,
Supervisor, Billing
Supervisor, Budget
Supervisor, Cost
Supervisor, Payroll

4130-114 SUPERVISOR, CASHIERS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in receiving and disbursing money, (Unit Group 4133):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Records daily overage or shortage in cash receipts. Requisitions additional cash as required for daily operations.

4130-118 SUPERVISOR, INSURANCE, BANK AND OTHER FINANCE CLERKS(bank. & finance; insur. & real estate) DPT:138

Supervises and co-ordinates activities of workers engaged in occupations of a clerical nature concerned with insurance, banking, finance and real estate (Unit Group 4135):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4130-122 SUPERVISOR, STATISTICAL CLERKS (clerical) DPT:138

Supervises and co-ordinates activities of statistical clerks engaged in compiling and tabulating statistics to assist in the interpretation of statistical studies, (Unit Group 4137):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4130-126 HEAD TELLER(bank. & finance) DPT:138
GED: 4 SVP: 8 EC: 1 PA: L 4 5 6 7

Supervises and co-ordinates activities of workers engaged in receiving and paying out money, maintaining bank and customers' records, and preparing and distributing customers' bank statements, (Unit Group 4133):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Explains banking services available to prospective customers and assists them in preparing application forms and establishing depository arrangements. Answers telephone, correspondence and counter enquiries and adjusts customers complaints. Reviews charges to be made against accounts for bank services and ensures these charges are correctly posted. Supervises the preparation and distribution of customers' bank statements, reconciliation of account differences and reports on status, value and cost of handling individual accounts. Approves cheques for encashment. Accepts stop payment orders and flags accounts to prevent withdrawals and payment of cheques. Ensures that an adequate supply of cash is held by 4133-110 TELLER (bank. & finance) based on legal requirements and business demands.
May consolidate and balance reports, using adding machine. May be

designated by work performed or by type of account maintained and classified accordingly; for example,
Supervisor, Current Accounts
Supervisor, Customer Accounts
Supervisor, Savings Accounts

4130-130 ASSISTANT ACCOUNTANT, BANK(bank. & finance) DPT:168
GED: 4 SVP: 5 EC: 1 PA: S 4 5 6 7

Co-ordinates activities of personnel in one or more departments of a bank, such as savings, current account, foreign exchange, cash clearing, credit or proof, performing any combination of the following duties:

Directs workers in the compilation of bank records, such as ledgers, diaries, registers and journals. Initiates or replies to department correspondence on matters, such as credit, business development and loans. Reviews and signs correspondence originated by sub-ordinates and prepares correspondence for signature by senior staff. Attends to customers telephone and counter enquiries on services provided by bank. Transacts business with customers at counter, such as authorization of cheques for encashment, opening new accounts and sale of money orders. Audits and spot checks 4133-110 TELLER (bank. & finance) holdings and other work by department personnel to ensure defalcations are prevented. Trains new employees and rotates personnel within the department.

May authorize loans up to established limit set by management. May lock up 4133-110 TELLER (bank. & finance) holdings nightly. May be designated according to department supervised; for example,
Assistant Accountant, Credit
Assistant Accountant, Current Accounts
Assistant Accountant, Foreign Exchange
Assistant Accountant, Proof-Clearing
Assistant Accountant, Savings

4130-199 OTHER SUPERVISORS, BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS

This group includes bookkeepers and account-recording supervisors, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in measuring land acreage; checking attendance at amusement and sporting events; compiling demurrage, freight and wharf charges; selling and cashing winning parimutuel tickets for patrons at race tracks; and collect tolls at toll bridges. Typical examples of occupational titles covered by this residual group definition are:

Supervisor, Credit Clerks(clerical)
Supervisor, Merchandising Clerks(clerical)
Supervisor, Parimutuel-Ticket Sellers and Cashiers(amuse. & rec.)
Supervisor, Toll-Bridge Attendants(clerical)
Supervisor, Wharf Clerks(clerical)
Toll Captain(clerical)

4131-BOOKKEEPERS AND ACCOUNTING CLERKS

This unit group includes occupations concerned with computing, classifying and recording data to keep sets of financial records; verifying accuracy of records related to payments, receipts and other transactions; posting entries in ledgers; balancing books, and compiling reports. Occupations concerned primarily with operating bookkeeping machines, computing machines and account-recording machines are classified in Unit Group 4141, OFFICE MACHINE OPERATORS.

4131-110 ACCOUNT-INFORMATION CLERK(elec. power) DPT:367
GED: 4 SVP: 6 EC: 1 PA: S 4 5 6 7

Keeps accounting records and compiles information requested by customers and others, relating to customer accounts:

Keeps records or corrects and completes computer records, and prepares report of meters registering use of gas or electric power. Prepares lists and enters charges and payments to customers' accounts

for additional deposits, special and irregular charges, or prepares records of corrections for computer processing. Reviews accounts not billed and prepares bills from available information. Enters, in meter books, information such as meter test reports and missed meter readings, received too late for billing. Processes final bills that exceed amount of deposit to enter amount of net bill. Interviews public to answer inquiries and complaints pertaining to bills, customer deposits and accounts. Answers inquiries by mail and investigates accounts rejected by computer to locate errors.

4131-114 BOOKKEEPER(clerical) DPT:384
GED: 4 SVP: 6 EC: 1 PA: S 4 7

Keeps complete records of financial transactions of establishment or undertaking:

Verifies accuracy of documents and records relating to payments, receipts and other financial transactions, and makes necessary calculations. Makes and checks entries from items, such as sales slips, invoices and cheque stubs, and totals ledgers at regular intervals. Compiles reports at specified intervals to show items; such as, receipts, payments, balances of accounts owing to or by the establishment or undertaking, and other financial information.

May prepare financial statements and accounts for the year or other specified period, calculate and arrange payment of wages, prepare and mail statements of accounts to customers, and perform various tasks related to bookkeeping.

4131-118 PAYROLL CLERK(clerical) DPT:464
GED: 4 SVP: 5 EC: 1 PA: L 4 7

Computes wages and posts wage data to payroll records:

Computes earnings from time sheets and work tickets, using calculator, or comptometer. Operates posting machine to compute and subtract deductions; such as, income tax, unemployment and other insurance, union payments and bond purchases. Enters net wages on earnings- record card, cheque stub and payroll sheet. Computes wages for employees working on bonus, commission, or piecework systems.

May keep records of sick leave, pay and non-taxable wages. May distribute pay cheques to employees or to department heads, settle payroll disputes and be designated accordingly,
Paymaster

4131-122 BILLING CLERK, UTILITIES(elec. power) DPT:468
GED: 3 SVP: 6 EC: 1 PA: S 4 7

Computes power factor and net amount of electric power or gas consumed by customers, performing any combination of the following duties:

Enters information on record forms for billing purposes. Maintains files on accounts, such as street lights, school boards, irrigation and various non-taxable provincial and federal offices, which require special attention for control and billing. Determines peak-load demand to verify application of appropriate rates. Notifies accounting section of variations from normal consumption for large electric and gas consumers which may affect revenue and consumption forecasts. Answers inquiries from customers, explaining such matters as rates, computation of bills, methods of metering, power factors and surcharges. Reads and resets certain meters in emergency or to settle disputes over meter readings.

May compile data for statistical reports. May analyze rates for large consumers of gas and electric-power.

4131-126 COST CLERK(clerical) DPT:388
cost-accounting clerk; cost-estimating clerk.
GED: 4 SVP: 5 EC: 1 PA: S 5 7

Calculates wage, material, overhead and other operating costs of an establishment:

Confers with plant production or other supervisory personnel to select machines or material for possible use in constructing and installing equipment or in manufacturing product. Reads tables to estimate cost of each production operation. Calculates individual items, such as labour, material and time costs, using calculating machines. Compares physical inventories with unit costs. Adjusts ledger entries to bring records up to date. Examines records, such as time and production sheets, payrolls, operations, charts and schedules to obtain data for calculations. Computes depreciation costs, using standard rates and

assigns costs to appropriate accounts. Maintains ledgers and records to account for inventories and assignment of plant expenditures. May be concerned with a specific type of costing and be designated accordingly.

4131-130 FOOD CONTROLLER(cater. & lodg.) DPT:468
GED: 4 SVP: 5 EC: 1 PA: S 4 7

Computes amounts and costs of food bought and sold from cashier's records and other summaries:
Calculates profit or loss on each item of food sold in restaurant and in each department of restaurant, using calculating machine. Compiles reports of food and beverages sold.
May compute amount and cost of liquor and other beverages bought and sold and be designated accordingly,
Food-and-Beverage-Control Clerk

4131-134 ACCOUNTING CLERK(credial) DPT:484
GED: 4 SVP: 5 EC: 1 PA: S 4 7

Performs variety of routine calculating, posting and typing duties to accomplish accounting:
Posts details of business transactions; such as, allotments, disbursements, remittances paid and due, cheques and claims. Totals accounts, using adding machine.
May compute, using calculating machine, and record interest charges, refunds, cost of lost or damaged goods, and similar items. May type vouchers, invoices, account statements, payrolls, periodic reports and other records. May verify accuracy of invoices and notify those responsible for discrepancies. May prepare debit and credit adjustment to correct erroneous invoices.

4131-138 AUDIT CLERK(bank. & finance; clerical) DPT:384
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Verifies accuracy of figures, calculations and postings pertaining to business transactions recorded by other workers and compiles reports:
Examines items, such as interest and accounts payable to verify accuracy of recorded data. Compiles and checks daily journal sheets from various departments to recapitulation sheet and posts information to general ledger. Corrects errors or lists discrepancies for adjustment. Computes percentages and totals and compares results of computation with recorded entries, using adding machine or calculator. Compiles reports for auditors to expedite auditing of accounts.
May perform a particular audit function and be designated accordingly; for example,
Charge-Account-Audit Clerk
Journal-Entry-Audit Clerk

4131-142 BOOKKEEPING CLERK(credial) DPT:388
GED: 4 SVP: 4 EC: 1 PA: S 4 7

Maintains records of one phase of an undertaking's or establishment's financial transactions, or performs limited bookkeeping functions:
Verifies accuracy of relevant documents and makes necessary calculations. Makes and checks entries and totals ledgers, balancing them at regular intervals. Classifies items on invoices and indicates accounts to which they should be charged. Examines and approves items for payment.
May compile statistical reports. May keep a particular section of bookkeeping records and be designated accordingly; for example,
Accounts-Payable Clerk
Accounts-Receiveable Clerk

4131-146 BUDGET CLERK(credial) DPT:384
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Prepares budgets based on previous budget figures or estimated revenue and expenses:
Reviews records of sales and actual operating expenses; such as, payrolls and material costs. Compiles tables of revenues and expenses to show current budget status. Examines and stamps approval on buying requisitions, for federal and provincial taxes. Checks requisitions for proper cost-coding information, and checks invoices to ensure proper stamping. Prepares charts and graphs and tabulates statistical data for presentation in miscellaneous budget reports.
May prepare financial statement showing profit and loss.

4131-150 BALANCE CLERK(credial) DPT:384
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Calculates, verifies and compares balances of one record book with prior balances of same or other record books:
Adds debit and credit items on ledger and journal sheets, using adding machine. Compares totals and subtracts to obtain balance. Examines individual items for errors in computation or transposition of numerals. Corrects errors or lists those to be corrected. Operates key-punch machine to post entries on tabulating cards.
May balance daily computer run to control sheet and check errors.
May balance a particular type of account and be designated accordingly,
Accounts-Receiveable-Balancing Clerk

4131-154 BILLING CLERK(credial) DPT:384
invoice clerk.
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Prepares invoices and bills of lading:
Computes amounts due from records; such as, purchase orders, sales tickets and charge slips, using adding or calculating machine. Types invoices, listing items sold, amounts due, credit terms and date of shipment. Types bills of lading and lists weight and lot number of items sold, using specifications book.
May type credit memoranda to indicate returned or incorrectly billed merchandise. May check and mail invoices and accounts for collection.
May interview credit account applicants. May telegraph shipping information to buyers. May file bills of lading, invoices and other shipping data to maintain records.

4131-158 TIMEKEEPER(credial) DPT:388
time clerk.
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Keeps daily record of arrival and departure of employees:
Reviews time sheets and time cards for completeness. Computes total time worked by employees, and posts to master time sheet. Transcribes hours worked by employees to appropriate job orders to facilitate pricing.
May locate workers on job at various times to verify attendance of workers on time sheet. May pay employees.

4131-162 POSTING CLERK(credial) DPT:588
entry clerk; transfer clerk.
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Records and examines business transactions in journals, ledgers, and on special forms, and transfers entries from one accounting record to another:
Records information, such as name, date, address, identification number, loan number, interest payments, price, errors in items charged, delinquent accounts, disposition of correspondence, purchase orders, and warrants or cheques, to provide current information.
May answer correspondence, and file certificates, file cards or other records. May operate calculating and adding machines.

4133-TELLERS AND CASHIERS

This unit group includes occupations concerned with receiving and disbursing money in industrial establishments, stores, banks, trust companies, credit unions and other financial institutions. Most of these occupations involve the use of adding machines, cash registers or change makers.

4133-110 TELLER(bank. & finance) DPT:367
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6 7

Receives and pays out money, keeps records of money and negotiable instruments involved in various bank transactions, prepares bank statements and reconciles errors or discrepancies in bank records and accounts, performing any combination of the following tasks:
Receives cheques and cash for deposit, verifies amounts and examines cheques for endorsement. Enters deposits in customer's pass book or issues receipts. Draws ledger cards and attaches items, such as

cheques, deposit and withdrawal slips so daily entries may be posted to customer's account. Files ledger cards after entries have been processed and checked. Cashes cheques and pays out money after verifying signature, authorization and customer's balance. Places holds on accounts for uncollected funds and posts stop payment notices. Orders supply of cash to meet daily requirements and counts incoming cash. Prepares customer's bank statements. Mails statement together with cancelled cheques to customer or hands it to customer personally and obtains receipt. Cancels cheques, using stamp or perforating machine, and files cancelled cheques. Maintains customer's signature files. Takes orders for imprinted cheques. Computes service charges on customer's account and accepts payments for utility bills and other accounts. Answers customer's enquiries in person or by telephone and reconciles discrepancies in records and accounts.

May operate various types of office machines; such as, adding machines, posting machines and typewriters. May sell domestic exchange, travellers' cheques, cashiers' cheques, drafts, money orders and buy and sell foreign currency. May explain banking services available to prospective customers and assist them in preparing application forms. May type and file list of new accounts. May be concerned with a specific activity or area of work and be designated accordingly; for example,
Teller, Current Account
Teller, Paying and Receiving
Teller, Savings Account

4133-114 FOREIGN-EXCHANGE TELLER(bank. & finance) DPT:367
GED: 4 SVP: 5 EC: I PA: L 4 5 6 7

Opens and services foreign-deposit accounts:
Determines service charges for cashing or handling cheques and makes entries on customers statements, account cards or deposit books. Sells drafts, transfers, travellers cheques and certificates of deposit drawn on foreign banks and mails confirmation of orders. Buys and sells foreign currency based on current rate of exchange. Counts and bundles foreign currency parcels for delivery to other banks. Maintains records and files on data, such as foreign items bought and sold, foreign draft advices and specimen signature cards of personnel in foreign correspondent banks with signing authority. Answers telephone and counter enquiries regarding foreign-exchange rates.

4133-118 CASHIER(clerical) DPT:464
GED: 3 SVP: 4 EC: I PA: S 4 5 7

Receives and records cash from customers in establishments, such as stores, restaurants and theatres:
Scans purchases; such as, groceries in retail store or tray of food in cafeteria. Tabulates bill using cash register and presents bill to customer for payment, or states amount of bill, and accepts payment. Gives change and issues receipts or tickets as required. Keeps records of amounts received and paid and reconciles cash balance with records. Wraps or places merchandise in bags or boxes. May be concerned with a particular activity and be designated accordingly; for example,
Cashier, Cafeteria
Cashier, Dining Room
Cashier, Groceteria
Cashier-Wrapper

4133-122 CASHIER, OFFICE(clerical) DPT:464
GED: 3 SVP: 4 EC: I PA: S 4 5 6 7

Receives money from customers or employees in payment for goods and services, disburses funds and records amounts received:
Computes bill using adding machine or cash register. Receives money from customers or through mail. Makes change, counts money and issues receipts for funds received. Endorse cheques, lists and totals cash and cheques, and prepares bank slips for deposit. Withdraws cash from bank and keeps custody of cash fund. Disburses cash and writes vouchers and cheques in payment of company expenditures. Posts data to accounts, and balances receipts and disbursements. Compiles collection, disbursements and bank reconciliation reports. May be concerned with a specific activity or work location and be designated accordingly.

4133-126 MONEY COUNTER(clerical) DPT:487
GED: 3 SVP: 4 EC: I PA: L 4 7

Counts and issues money for use in sales department, at race track or other place of amusement:
Makes change and cashes cheques for patrons from sales floor or place of amusement. Counts and issues money to ticket sellers and cashiers ensuring that there is sufficient supply to make change or pay patrons. Counts money in cash registers and balances cash against total sales. Keeps record of cash sales and accrued taxes. Verifies records of workers accepting or paying out cash on wagers by counting and recording number of parimutuel tickets cashed.

4133-130 CASHIER, BOX OFFICE(clerical) DPT:467
GED: 3 SVP: 3 EC: I PA: S 4 5 6 7

Sells tickets for admission to places of entertainment, such as skating rinks, ball parks, stadiums, race-tracks and motion-picture theatres:
Depresses key on ticket-dispensing machine that automatically ejects number of tickets requested by patron, or tears tickets from roll and hands to patron. Accepts money and makes change. Answers questions concerning admission prices, picture and game schedules, and gives information concerning coming attractions. Keeps daily-balance sheet of cash received and tickets sold. Fills reservations for seats by telephone or mail.
May be concerned with a particular activity and be designated accordingly,
Ticket Seller

4133-134 CASHIER, CUSTOMER SERVICE(ret. trade) DPT:467
GED: 3 SVP: 3 EC: I PA: L 4 5 6 7

Cashes cheques for customers and monitors check-out stands in self-service store:
Cashes personal and payroll cheques. Provides information to customers. Receives customers' complaints and resolves complaints when possible. Monitors check-out stand to reduce customer delay. Calls additional workers to stands when situation warrants. Issues cash to stands and removes excess cash. Audits cash register tapes. May compile reports, verify employee time records and prepare payrolls.

4133-199 OTHER TELLERS AND CASHIERS

This group includes tellers and cashiers, not elsewhere classified; for example, those who collect tolls at toll-bridges, and sell and cash winning parimutuel tickets for patrons at race tracks. Typical examples of occupational titles covered by this residual group are:
Parimutuel-Ticket Cashier(amuse. & rec.)
Parimutuel-Ticket Seller(amuse. & rec.)
Toll Collector(clerical)

4135-INSURANCE, BANK AND OTHER FINANCE CLERKS

This unit group includes occupations, of a clerical nature, concerned with insurance, banking, finance and real estate. Activities include: reviewing insurance applications; calculating premiums, dividends and cash-surrender values; making insurance policy changes; processing applications for loans and mortgages; checking ledgers, renting safety-deposit boxes, and recording security deposits; and compiling rental, sale or management data related to real estate.

Insurance Clerks

4135-110 through 4135-162

4135-110 GENERAL CLERK, INSURANCE(insur. & real estate) DPT:264

GED: 4 SVP: 6 EC: I PA: S 4 7

Carries out clerical functions incidental to the transaction of life, fire, marine, automobile or other type of insurance, by performing any combination of the following duties:

Issues, receives and checks insurance application forms. Arranges for medical examinations of applicants for life insurance and for surveys of property to be insured, or obtains necessary documentary evidence. Calculates premiums, surrender or loan value of policies, using calculator and rate book, and commissions payable, and makes written requests for outstanding premiums. Changes insurance coverage as requested and calculates revised premium. Analyzes claims, computes amounts due or proposes settlement terms.

4135-114 POLICY-CHANGE CLERK(insur. & rel. estate) DPT:268

GED: 4 SVP: 6 EC: I PA: S 4 5 6 7

Changes insurance policies as requested by policyholder or his agent and provides information concerning policies:

Performs duties similar to those of 4135-110 GENERAL CLERK, INSURANCE (insur. & real estate). Specializes in effecting policy changes. Reviews original application and company documents, and complies with company or government regulations to effect proposed changes in beneficiary or methods of premium payment, increases in principal sum or changes in type of insurance. Compiles data on lapsed insurance policies to determine if they can be automatically reinstated according to company policies. Calculates commission adjustments, new reserve requirements, and premium revisions, using rate books, statistical tables and knowledge of specific types of policies. Sends out notice of reinstatement approval or denial, and amount of payment due. Corrects company records to adjust errors.

May compute loan surrender value of life insurance policies, cancel insurance policies or prepare answers to requests for information and be designated accordingly,

Policyholders' Information Clerk

4135-118 PROPERTY AND EQUIPMENT INSURANCE CLERK (clerical) DPT:387

GED: 4 SVP: 6 EC: I PA: S 4 7

Compiles insurance records and collates premium payments in an industrial or other organization:

Keeps calendar of premiums due and expiration date of policies. Prepares vouchers for payment of premiums, and verifies that payments have been made. Fills in data on renewal-policy applications and forwards them to insurance company. Compiles statistical data for reports to insurance company and departments in organization. Notifies insurance company of changes in property or equipment affecting insurance coverage. Writes amortization schedules. May dictate letters to insurance companies and other establishments, using dictating machine.

4135-122 SPECIAL-ENDORSEMENT CLERK(insur. & real estate) DPT:388

GED: 4 SVP: 6 EC: I PA: S 4 7

Drafts election to basic life insurance agreement consistent with company and legal requirements to denote method of payment to beneficiary:

Reviews insured's request and examines basic policy to determine modifications required in basic agreement. Dictates text of modifying agreement to be appended to basic policy. Approves payments of insurance, annuities and pensions to retired personnel. Prepares supplementary contracts covering payments. Prepares and dictates correspondence.

4135-126 ACTUARIAL CLERK(insur. & real. estate) DPT:384

GED: 4 SVP: 5 EC: I PA: S 4 7

Performs actuarial computations, using algebra and trigonometry and compiles charts and graphs for use in actuarial studies:

Computes actuarial data, such as annuity payments, amount of risk, profit margins, premium rates and employee contributions to retirement plans, using calculating and adding machines, actuarial formulas, statistical tables, insurance-rate books and previous

calculations. Compiles results of calculations into charts and graphs to be used in actuarial studies.

May index and file records of rates, formulas and tables used. May keep work journal. May perform other non-actuarial statistical studies.

4135-130 REINSURANCE CLERK(insur. & real estate) DPT:484

GED: 4 SVP: 5 EC: I PA: S 4 7

Calculates reinsurance liability, and types reinsurance applications and contracts performing any of the following duties:

Calculates reinsurance required on each risk covering limit of liability. Selects reinsurers who may accept part of ceded liability. Types applications and computes amount of each premium due, using calculating machine. Accepts reinsurers and their liability for cash values and dividends. Receives insurance application from prime insurer. Types notice of acceptance or rejection based on limit of liability, and action of insurance underwriters. Updates reinsurance file cards to maintain company records. Types statements of reinsurance ceded, and reinsurance payments and receipts for policyholders.

4135-134 INSURANCE CLERK, BANK(bank. & finance) DPT:268

GED: 3 SVP: 5 EC: I PA: S 4 7

Places and renews insurance on bank's property or premises, keeps records of bank-owned insurance and fire insurance, and analyzes adequacy of insurance coverage:

Examines contract purchases and leases to determine insurance requirements. Orders public liability and property damage policies on all property from which bank's liability might result. Evaluates risks involved in moving bank valuables to determine insurance coverage required. Approves shipment of valuables in excess of branch bank's standing instructions and adjusts insurance coverage accordingly. Reviews policies to ensure bank's interests are guaranteed and adequate. Arranges transfer or cancellation of coverage upon disposal of property. Records accident reports and notifies insurance company. Reviews policies for cancellation or expiration dates, and recommends raising or lowering coverage according to present or anticipated requirements. Keeps records of bank owned insurance. Files claims against insurance companies for various types of losses. Initiates and replies to correspondence pertaining to routine insurance matters.

4135-138 WORKSHEET CLERK(insur. & real estate) DPT:387

GED: 3 SVP: 5 EC: I PA: S 4 7

Compiles abstract sheet (worksheet) used in preparing insurance documents, such as record files and insurance policies:

Compiles insurance data, such as age, occupation and address of applicant and spouse, type of policy, billing instructions and effective dates, from application, inspection reports and correspondence. Calculates premium rates, using rate book. Codes and records information on abstract sheet or master cards to guide other workers in preparing documents.

May type abstract sheet, master cards, policies, contracts for policy changes, lost policies and agreements, and specimen policies. May send and receive messages, using teletype machine.

4135-142 INSURANCE CHECKER(insur. & real estate) DPT:484

GED: 3 SVP: 5 EC: I PA: S 4 7

Verifies accuracy of applications for insurance and company records by performing any combination of the following duties:

Performs duties similar to those of 4135-110 GENERAL CLERK, INSURANCE (insur. & real estate). Specializes in checking insurance application and company records. Checks applications for completeness, compares computations on premiums paid, interest and dividends due with same data on other records. Proofreads printed material concerning insurance programs. Verifies computations on interest accrued, premiums due, and settlement surrender or loan values, using calculating machine.

May verify policyholder's name and age from birth certificate or from previous insurance policies with company. May train new employees. May check a specific type of work and be designated accordingly; for example,

Abstract Checker
Application Reviewer
Policy Checker

4135-146 EMPLOYEE-INSURANCE CLERK(clerical) DPT:568
group-insurance clerk.
 GED: 3 SVP: 5 EC: 1 PA: S 5 6 7

Keeps records of company group insurance policies; such as, life, hospitalization and workmen's compensation, and interviews employees regarding claims; Interviews employees to obtain information concerning claims and explains benefits available, using insurance company literature and experience gained in processing past claims. Assists employees in completing claim questionnaires by reviewing them and pointing out omissions or inaccuracies. Explains insurance plan to new employees, writes date on application forms and forwards them to insurance company. Corresponds with physicians, hospitals and employees regarding claims. Files records of claims and fills out cancellation forms when employees leave company service.

4135-150 INSURANCE CLERK, HOSPITAL(medical) DPT:364
 GED: 3 SVP: 4 EC: 1 PA: S 4 5 7

Verifies hospitalization insurance coverage and computes benefits for patients in hospital:
 Types on insurance assignment form data; such as, name of insurance company and policyholder, policy number and doctor's diagnosis. Telephones, writes, or wires insurance company to verify patient's coverage and to obtain information concerning extent of benefits. Computes total hospital bill showing amounts to be paid by insurance company and by patient. Answers patient's questions regarding statements accounts and insurance coverage.

4135-154 RATER, PREMIUM(insur. & real estate) DPT:388
premium and commission calculator.
 GED: 3 SVP: 4 EC: 1 PA: S 4 7

Calculates amount of premium to be charged for various types of insurance, using rate book:
 Selects premium rate based on information in case-record folder relating to type and amount of policy, and to risk factors, such as use and age of automobile, location and value of property or age of applicant. Adds premium rates of basic policy and endorsements to compute total annual premium. Records rates on worksheet from which policies will be typed.
 May calculate commissions and sales credits. May operate calculating machine. May prepare government registration forms for new group policies. May maintain new group policy files and record cards.

4135-158 CLAIM CLERK(insur. & real estate) DPT:268
 GED: 3 SVP: 3 EC: 1 PA: S 4 5 6 7

Analyzes insurance claims to determine extent of company's liability and settles claims with claimants according to policy provisions:
 Performs duties similar to those of 4135-110 GENERAL CLERK, INSURANCE (insur. & real estate). Specializes in processing insurance claims. Compares data on claim application, death certificate or physician's statement with policy file and with other company records to ascertain completeness and validity of claim. Corresponds with agents and claimants or interviews them in person to correct errors or omissions on claim forms, and to investigate questionable facts. Pays claimant amount due.
 May specialize in particular type of claim and be designated accordingly; for example,
 Accident-and-Sickness Clerk
 Death-Claim Clerk
 Medical-and-Surgical-Claim Clerk
 Total-Disability-Claim Clerk

4135-162 DIVIDEND CLERK(insur. & real estate) DPT:484
dividend-deposit-voucher quoter.
 GED: 3 SVP: 3 EC: 1 PA: S 4 5 7

Keeps record of accruing dividends on insurance policies and calculates and records interest due on them;
 Computes, balances and records credit dividends, interest on deposits,

and daily payments of interest to policyholders, using calculating machine. Records and files policyholders' payments, interest paid to policyholders and interest held in policyholders' accounts. Types annuity letters and paid-up certificates for forwarding to policyholders.

Bank Clerks
4135-182 through 4135-210

4135-182 UTILITY CLERK, BANK(bank. & finance) DPT:367
 GED: 4 SVP: 6 EC: 1 PA: S 4 5 6 7

Performs any combination of the following duties in a bank while supplementing or replacing regular staff:
 Receives cheques and cash for deposit, cashes and cancels cheques, pays out money to customers and keeps records of money and negotiable instruments. Sorts deposit slips and cheques, totals cheques and redirects them to proper accounts. Prepares clearing lists for distribution to drawee banks by listing, endorsing by machine and recapitulating totals. Prepares and distributes bank-account statements with cancelled cheques to customers and reconciles discrepancies in accounts. Types ledger cards, debit and credit forms. Updates signature cards. Posts debit and credit entries to customers' ledger cards, verifies all balances brought forward and records charges to customers' accounts for NSF cheques, over-drafts, and service charges. Buys and sells foreign currencies based on current rates of exchange and sells foreign drafts, transfers and travellers' cheques. Records balances and proves bank financial transactions. Accepts negotiable items, such as cheques, drafts, coupons and bonds for collection, keeps file on due dates, routes items for collection and records payments. Sorts, counts and wraps paper money and coin by denomination. Rents safety-deposit boxes and keeps relevant records, such as signature cards, rental files and vault access slips. Reproduces copies of, transit letters, outgoing cheques and machine tapes, using reproduction machine. Prepares listing of transit items, using adding machine. Proves daily transactions by comparing total on list with total on proof machine. Promotes sale of bank services and transacts business with customers at counter. Answers telephone, counter and mail enquiries. Assists customers in completing various bank forms.
 May operate proof machine to sort, record and prove bank transactions. May assist in training new employees. May perform a specific type of activity or work in a specific area and be designated accordingly; for example,
 Branch-Clearing Clerk
 Discount Clerk
 Ledger Clerk
 Proof Clerk
 Relief Clerk
 Savings Checker
 Sorting Clerk

4135-186 FOREIGN-REMITTANCE CLERK(bank. & finance) DPT:368
 GED: 4 SVP: 6 EC: 1 PA: S 4 7

Collects and settles foreign bills of exchange between branch bank and foreign correspondent banks:
 Receives bills of exchange from branches to be endorsed and sent to correspondent bank. Prepares entries to foreign currency accounts to effect refunds to branches requesting them. Reconciles debits attached to incoming cash lists with duplicates of trading advices and journal slips. Records pertinent data and prepares batch sheet. Remits drafts to depositors on credit accounts. Verifies maturity dates of bills, dispatches them for collection and receives payment. Checks daily summary of transactions for outward foreign remittance. Corresponds with foreign depositors, checks and co-signs outgoing drafts and credit advices for accuracy and correct authorization. Audits entries to foreign bank accounts and daily entries to clearing-recapitulation sheets. Investigates outstanding items presented for payment for which settlement had not been received. Prepares commercial letters-of-credit and verifies accompanying documents before mailing to correspondent.
 May adjust foreign funds accounts and be designated accordingly,
 Foreign-Currency-Accounts Adjuster

4135-190 RESERVES CLERK(bank. & finance) DPT:388
GED: 4 SVP: 6 EC: 1 PA: S 4 7

Compiles records of deposits, withdrawals, clearings and bank reserves:

Compiles running record of entries and checks balance with Bank of Canada daily statements. Charges or credits accounts following bank regulations. Keeps record of bank's balance with Bank of Canada by checking currency balance. Compiles and completes daily-reserve-comparative statement for bank executives showing factors, such as reserve ratios, and credit and debit of large customers. Prepares journal sheet showing gains and losses for clearing-house points or withdrawals from Bank of Canada. Classifies branch loans according to specified code, for listing on proof machine. Consolidates totals and number of loans under separate classifications. Posts specified accounts to General Ledgers. Compiles net reserve report for Inspector-General of Banks by applying reserve ratio to large loans.

4135-194 SECURITIES CLERK(bank. & finance) DPT:364
GED: 4 SVP: 5 EC: 1 PA: S 4 5 7

Records transactions of securities and attends to customers at the counter performing any combination of the following duties in a bank or trust company:

Fills out purchase applications, receives payments for securities purchased and issues receipts. Prepares transmittal papers or endorsements for securities sold to ensure payment, transfer and delivery. Records securities transactions including sales, purchases, exchanges and stock splits to maintain control of customers' accounts. Verifies data, such as description, signature, date of issue, accrued interest, payment date and amount due on securities received from other banks, trust companies or customers. Proves daily transactions, using calculating or adding machine. Sorts stocks, bonds, coupons and ownership certificates for distribution to other departments. Balances inventory of securities held by bank or trust company. Prepares cheques to pay bills in settlement of securities transactions and records cheques drawn and paid. Drafts replies to answer correspondence inquiries on security transactions from bank or trust company officials and customers. Prepares records and inventory sheets of securities held as collateral. Examines government bonds for negotiability and arranges for the cancellation of their registration at Bank of Canada, if necessary. Removes and delivers securities to and from vault and prepares vault-withdrawal orders at customers' request. Cancels coupons or bonds for which payment has been made, using cancelling machine. Acts as bank or trust company agent when auditors are examining securities held in vault. Collects, records and transmits incoming and outgoing registered mail. Ensures that securities are filed in security trucks and placed in vault at the close of each business day. May be in charge of securities in a small branch. May perform a specific task in a Head Office and be designated accordingly.

4135-198 CREDIT CLERK, BANK(bank. & finance) DPT:368
GED: 4 SVP: 5 EC: 1 PA: S 4 7

Keeps records of securities held by bank as collateral and receives and processes payments on loans granted by bank's credit or loan officers:

Keeps records of customer's negotiable securities; such as, bonds, debentures and stocks held by bank as collateral. Keeps and reviews records of customer's non-negotiable securities, such as fire and life insurance policies, lien notes and contracts to ensure that bank's interest is guaranteed. Keeps records in diaries and ledgers of bank credit transactions, such as discount, home improvement, student and farm loans. Keeps daily liability register to record discounted notes and balance customers' overdrawn accounts. Receives cash payments at counter. Processes cheques or money orders received by mail and sends receipts to customers on request. Computes interest and payments, using adding machine or calculator. Compiles reports on status of bank loans over a fixed amount and on delinquent accounts. Adjusts incorrect credit charges billed to customers accounts. Initiates or replies to correspondence and answers telephone or counter inquiries relating to credit matters.

May review personal or company requests for additional credit and advise management on desirability of granting credit. May supervise work of other credit department clerks. May be designated according to type of activity and classified accordingly; for example, Credit-Records Clerk
Liability Clerk

4135-202 COLLECTION CLERK, BANKING(bank. & finance) DPT:368
GED: 3 SVP: 5 EC: 1 PA: S 4 5 6 7

Accepts cheques, drafts, coupons, notes, bonds and other negotiable instruments from other banks for collection, exchange and distribution of payments:

Prepares or reviews collection forms, such as transmittal letter and advice records. Maintains file on items with due dates. Routes collection items, record payments and issue receipts. Computes and deducts or adds new principal, interest, collection or discount charges, using calculating machine. Credits or remits proceeds and releases documents and instruments upon full payment. Processes foreign collections and bills of exchange. Writes letters to accompany collections sent by mail. Prepares commercial letters-of-credit and verifies all documents accompanying them to ensure they are in order before mailing to correspondent banks. Processes utility bills and mails receipts to applicable establishments.

4135-206 BANK-RECONCILIATION CLERK(bank. & finance) DPT:384
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Reconciles total shown on company's bank ledger with total shown on company's bank statement:

Lists outstanding cheques, deposits not yet posted by bank, and service charges not yet posted on company records. Computes adjusted totals, using adding machine. Types vouchers, account statements, payrolls and periodic reports. Converts foreign currency figures into Canadian monetary equivalents, or domestic currency into foreign equivalents.

4135-210 SAFETY-DEPOSIT-BOX CUSTODIAN(bank. & finance) DPT:668
safety deposit-box clerk; vault attendant.
GED: 3 SVP: 4 EC: 1 PA: L 4 5 6 7

Rents safety-deposit boxes to bank customers and admits accredited persons to vault:

Interviews customer to obtain data for completion of rental contract and obtains customer's signature. Collects rental fee and writes receipt, or originates form to debit customer's account. Admits customer to vault, obtains signature and notes entry and exit times on access slip. Inspects customer's booth after customer is finished to ensure nothing has been left behind. Maintains safety-deposit records, such as signature cards, rental files and vault access slips. Orders replacements for lost keys, and repairs for safety-deposit-box locks.

May read obituary columns in newspapers, and seal boxes of deceased customers until federal and provincial clearance has been obtained. May answer telephone inquiries and correspondence concerning safety-deposit boxes.

Other Finance Clerks 4135-230 through 4135-246

4135-230 PENSION-PLAN CLERK(clerical) DPT:268
superannuation clerk.
GED: 4 SVP: 5 EC: 1 PA: S 4 5 6 7

Analyzes, compiles and records pension-plan data, performing any combination of the following clerical duties:

Determines when employee should become a contributor to pension plan and specifies rate of contributions, by analyzing documents which outline nature of appointment and terms and conditions of employment. Provides estimate of cost of election for prior pensionable employment from service records or other documents. Processes cases involving transfer of funds and service credits under reciprocal agreements, and revocation of election at contributor's request. Notifies accounting department when employee deductions are to be discontinued. Communicates with interested parties, when verifying details, by writing, telephone or in person. Examines documents, writes summaries and recommends solutions of complex cases to supervisor. Prepares prescribed documents for payment of benefits to pensioner or beneficiary.

4135-234 REAL-ESTATE CLERK(insur. & real estate)

DPT:384

GED: 4 SVP: 5 EC: I PA: S 4 7

Compiles data concerned with rental, sale or management of real estate, performing any combination of the following duties:
Types copies of listings of real estate rentals and sales for distribution to trade publications and for use as reference data by other departments. Computes interest owed, penalty payment, amount of principal and taxes due on mortgage loans, using calculating machine. Holds in escrow collateral posted to ensure fulfilment of contracts in transferring real estate and property titles. Checks due notices on taxes and renewal dates of insurance and mortgage loans to take follow-up action. Sends out rent-due notices to tenants. Writes cheques in payment of bills due, keeps record of disbursements, and examines cancelled returned cheques for endorsement.
May compile list of prospects from leads in newspapers and trade periodicals to locate prospective purchasers of real estate.

4135-238 MORTGAGE CLERK(bank. & finance)

DPT:364

GED: 3 SVP: 5 EC: I PA: S 4 7

Performs any combination of the following duties to process loan applications for purchasers wishing to obtain building loans:
Interviews applicants for loans to obtain information for bank or loan company officials. Assembles, examines and processes applications for loans, appraiser's reports, construction plans, surveyor's certificates, credit ratings, realty tax data and fire insurance, for approval of bank or loan company officers. Records loan data on file cards and keeps files to guard against tax delinquencies and expiration of insurance policies. Types legal papers and other documents affecting title to real estate. Prepares and mails tax and insurance premium notices to remind customers of payments due. Draws up notes on conditions of agreements for inclusion by solicitor in mortgage papers, and obtains signatures on loan application forms.

4135-242 BROKERAGE CLERK(bank. & finance)

DPT:368

GED: 3 SVP: 5 EC: I PA: L 5 6 7

Processes securities and cheques in and out of brokerage or in investment-dealer's establishment, performing any combination of the following duties:
Gives information to customer by telephone regarding price of stock or market fluctuations. Receives telephoned or telexed buy or sell orders from broker and passes them to supervisor for required action. Reports details of executed order to designated employee. Totals daily transactions and summarizes effects on broker's holdings on journal sheets.
May make deliveries to and from banks and trust companies.

4135-246 MARGIN CLERK(bank. & finance)

DPT:388

GED: 3 SVP: 5 EC: I PA: S 4 7

Calculates margin requirements in broker's office:
Computes customer's equity (margin) in stocks purchased from original cost of stock and its present market value. Notifies supervisor if this equity is less than that required by the provincial Securities Commission or individual brokerage house. Records customer's transactions to show amount due for brokerage interest charges.

4137-STATISTICAL CLERKS

This unit group includes occupations concerned with compiling and tabulating statistics based on routine or special information, preparing reports on source material, and supplying factual information to assist in the interpretation of statistical studies.

4137-110 STATISTICAL CLERK(clerical)

DPT:384

GED: 4 SVP: 5 EC: I PA: L 4 7

Compiles and tabulates statistics for use in statistical studies:
Compiles statistics from source materials, such as production, sales, advertising, quality-control and test records, expense invoices, debit notes, merchandise budgets, bank records, time sheets and survey sheets and charts. Assembles and classifies statistics, following

prescribed procedures. Operates adding machine and calculator to complete statistical formulas. Verifies authenticity of source material. Maintains current account of hours worked by tradesmen on each project, checks manpower reports against manpower forecasts, and prepares analysis of manhours on completed projects showing original estimate and actual hours expended.

May maintain productivity and efficiency charts. May be designated according to type of statistics compiled; for example, Statistical Clerk, Advertising Statistical Clerk, Production

4139-BOOKKEEPING, ACCOUNT-RECORDING AND RELATED OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with classifying, compiling and recording information, and transferring this data into accounts and quantitative records. Activities include: measuring advertising space and land acreage, checking attendance at amusement centres, preparing contracts and compiling demurrage, freight tonnage, and wharf charges.

4139-110 CONTRACT CLERK(clerical)

DPT:264

GED: 4 SVP: 7 EC: I PA: S 7

Examines contract documentation and processes its execution, performing any combination of the following clerical duties concerned with awarding or receiving contracts:
Receives tenders and security deposits from contractors, and provides them with plans and specifications. Ensures that documentation and contract files are available for processing. Routes contract documents to contractors and other interested parties, checking them at each stage to ensure that they have been correctly completed. Maintains diary of individual contracts to record progress, adherence to time schedules, and other information; such as, completion dates, renewals and changes in insurance coverage or bonding, consultants' and other agreements, and labour and material payments. Drafts correspondence for signature and types contract documents. Returns security deposits to contractors. Answers inquiries in person or by telephone from contractors and others concerning progress of contract.

4139-114 RATE REVIEWER(elec. power; utilities, n.e.c.)

DPT:388

GED: 4 SVP: 6 EC: I PA: S 4 7

Reviews electric, gas and transit rates, and compiles data pertaining to operating cost and revenues, performing any combination of the following duties:
Reviews rate investigation reports, analyses of billings and rate assignments for completeness and conformity to regulations. Proposes new rates and reviews and revises existing rates by observing those charged by other utility companies. Develops charges for individual customers or classes of customers, and calculates revenue to be obtained from new rates, using calculator. Draws graphs and charts using draughting instruments to illustrate changing trends, and keeps records of changes. Summarizes computer runs to answer requests for specific statistical information. Compiles data for reports pertaining to costs, revenues and volumes of gas and electricity consumed.
May act as member of company rates committee as required.

4139-118 UTILITIES CLERK(elec. power; telecom.; utilities, n.e.c.)

DPT:367

GED: 4 SVP: 5 EC: I PA: S 4 5 6 7

Interviews prospective customers for gas, electric or telephone service and makes required reports, performing any combination of the following duties:
Interviews customer to explain plans available. Assists customer in filling out application or completes it for him. Reviews applications received by mail. Checks applicant's references by letter or telephone, and notifies customer of acceptance or rejection of credit. Determines charges, collects deposits, prepares changes of address records for electric power and telephone service, and files credit applications. Adjusts complaints concerning billing or service rendered. Checks

account-information registers to verify closed account data, and compares these with premises' records to locate discrepancies and ensure proper billing of customers. Communicates with agents or owners to ensure responsibility for payment of utility consumption between tenancies. Issues discontinuance of service orders when responsibility is refused. Forwards change of tenant applications to meter-recording section of office.

4139-122 CREDIT CLERK(clerical) DPT:368
GED: 4 SVP: 5 EC: I PA: S 4 5 6 7

Examines and processes application of individual applying for loan or credit:
Interviews customer and verifies credit references and other information, such as name, address and where individual is employed. Determines credit limit based on applicant's assets, credit experience and personal references. Summarizes, in prescribed form, information concerning loan or credit application and extracts pertinent data. Passes this information to approving authority. Monitors flow of credit applications to ensure adherence to lines of credit authorized by approving officer. Keeps record of credit transactions and payments and accepts payment of accounts. Computes interest and payments, using adding and calculating machine. Issues credit card to customer for use as identification when purchasing articles to be charged to his account. Keeps record of cards reported lost, checking off number on customer's account, and reissues new cards.

4139-126 TONNAGE-COMPILATION CLERK(water trans.) DPT:384
GED: 4 SVP: 5 EC: I PA: S 4 7

Calculates tonnage and prepares report of ship's cargo loaded or unloaded in port, for assessment of tariff for use of port or harbour facilities:
Reads register of merchant vessels compiled from master's inward and outward reports to verify tonnage, registry and ship's owner. Converts measurements of volume into tonnage. Calculates tonnage of each commodity from ship's manifest into revenue tons, calculates charges and types tariff form for service furnished such as pier and shed accommodation. Verifies conversions from one weight system to another. Prepares tonnage list for each commodity and submits list to accounting department. Prepares and sends billing request accompanied by revision sheet to district accounting department. Codes each item according to Dominion Bureau of Statistics classification system for statistical purposes. Verifies claims and makes adjustments of errors on customer's complaints. Keeps records of ships entering port, and tonnage of cargo loaded or unloaded. Submits reports to accounting department for billing purposes.

4139-130 INTERLINE-ACCOUNTS CLERK(air trans.; motor trans.; rail trans.) DPT:484
GED: 4 SVP: 5 EC: I PA: S 4 7

Computes freight charges payable to other railroads on interline business:
Examines waybills, to compute number of miles freight is transported by air, rail or road. Computes and records freight charges payable to each carrier, using basic rates from rate table and calculating machine. Reviews statements submitted by other companies to determine accuracy of amounts charged and to correct errors. Types and issues forms to trace missing waybills or revenues. Compiles monthly total of tonnage moved over various lines.

4139-134 FOREIGN-INVOICE CLERK(clerical) DPT:484
GED: 4 SVP: 4 EC: I PA: S 4 7

Computes duties, tariffs, weight, volume and price conversions of merchandise exported to or imported from foreign countries:
Examines documents; such as, invoices, bills of lading and shipping statements to verify conversion of merchandise, weight or volumes into the system used by the other country. Converts foreign currency figures into Canadian money equivalents. Calculates duties or tariffs to be paid on merchandise, using comptometer. Classifies goods for duty purposes. Assists in making up customs entries. Allocates foreign exchange and duty charges among merchandise departments.
May visit Customs Department to arrange clearance of transport vehicles and deliver necessary papers to customs personnel. May correspond with foreign companies regarding shipments.

4139-138 FREIGHT-RATE CLERK(clerical) DPT:368
traffic-rate clerk.
GED: 3 SVP: 5 EC: I PA: S 4 5 7

Determines rates and charges applicable to freight shipments:
Examines shipping bills to obtain description of freight and classifies freight according to rate-book description. Consults rate schedule to obtain specific rate for each item classified depending on distance shipped. Computes total freight charges and records charges on shipping order. Calculates and records storage, redelivery and reconsignment charges when applicable. Answers inquiries from shippers regarding rates, routing and interline transportation procedures. Verifies and revises freight and tariff charges on bills for freight shipments, using freight and tariff rate schedules. Examines bills of lading and files claims with transportation companies for overcharges. Contacts transportation companies, using telephone or mail service to obtain supplements or amendments to tariff schedules. Compiles statistical reports; such as, rate quotations and instructions concerning division of business between companies.
May keep record of freight movements.

4139-142 DEMURRAGE CLERK(rail trans.; water trans.) DPT:384
GED: 3 SVP: 5 EC: I PA: S 4 7

Compiles demurrage charges, using basic rates from rate tables:
Reviews bills of lading to ascertain number of carloads or shipments, and computes demurrage charges, using basic rates from rate table, and adding machine. Checks demurrage charges on cars or ships that have overstayed their time. Prepares and types demurrage bill and forwards it to consignee or shipper. Prepares daily list of outgoing traffic, and sends it to Head Office. Sends in weekly report to Canadian Car Demurrage Bureau. Types and files correspondence and files duplicate bills for demurrage charges.

4139-146 WHARF CLERK(water trans.) DPT:384
GED: 3 SVP: 5 EC: I PA: S 4 7

Compiles reports, such as dockage, demurrage, wharfage and storage to ensure that shipping companies are assessed specified harbour fees:
Compares ship's manifest with information on statements, records and reports to determine that weight, measurement and classification of commodities meet tariff regulations. Calculates tariff assessment from ship's manifest to ensure that charges are correct, using calculating machine. Prepares and submits reports to supervisor, using typewriter.

4139-150 RATE-REVISION CLERK, FREIGHT(motor trans.; rail trans.) DPT:388
GED: 3 SVP: 5 EC: I PA: S 4 7

Revises and compiles rate tables according to current tariff regulations by reviewing existing rates and making required changes:
Reviews regulations governing established rates to determine required changes in freight rate charts. Computes and compiles rate manual sections according to rate revisions based on handling costs, merchandise transported, refrigeration required, load volume, business volume and potential return trip loads.
May propose rates for activities not rated.

4139-154 CHART CLERK(clerical) DPT:484
GED: 3 SVP: 5 EC: I PA: S 4 7

Computes flow of oil or gas by means of charts taken from flowmeters and other recording instruments, using planimeter, and prepares statistical reports:
Fastens chart to base of planimeter. Guides tracing point of planimeter around periphery of area on chart to be measured. Observes readings and calculates flow or quantity, using prescribed formula. Compiles statistical reports by filling in data on prepared forms.

4139-158 PLANIMETER OPERATOR(clerical) DPT:484
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Traces boundary lines of land plots on aerial photographs to determine acreage, using planimeter:
Centers tracer point of planimeter arm on plot to be measured and places pivot arm at right angle to tracer point. Moves tracer point to starting point on photograph according to shape of area to be measured, and traces boundary until point of beginning is reached. Records figures shown on dial and measuring wheels of planimeter at beginning and end of tracing and subtracts figures from each other to determine quantities.

4139-162 ADVERTISING-SPACE MEASURER(print. & pub.) DPT:384
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Measures amount of advertising space used in publications; such as, newspapers and magazines to determine advertising cost per item and prepares statement of customer's account:
Receives log, detailing account, name and location of advertisement in newspaper, from Advertising Display Section. Measures advertising space in newspaper by placingagate ruler over printed material. Refers to customer's contract to determine cost per line and computes total charges by extending number of lines by unit cost. Prepares statements, using billing machine. Files new or revised customer contracts.

4139-166 LAND MEASURER(clerical) DPT:487
GED: 3 SVP: 4 EC: 0 PA: L 4 7

Measures land, used for growing crops, to calculate acreage worked and to compute wages of workers or payments to contractors:
Visually divides irregularly shaped fields into geometrical sections. Calculates mean distances by measuring maximum and minimum

distances. Measures length and width of each section, using measuring sticks or tape. Computes land area to ascertain payment.
May sketch diagram of measured piece of land, indicate measurements and give to supervisor for calculation of exact acreages.

4139-170 CODING CLERK(clerical) DPT:388
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Converts items of information, obtained from records and reports, into codes for processing by data typing or key-punch units, using predetermined coding systems:
Manually records alphabetic, alphameric or numeric codes for data; such as, debit notes, cheque issues and invoices in prescribed sequence on worksheet or margin of source document for transfer to punchcards or machine tape.
May prepare report of purchases from suppliers.

4139-174 CHECKER, ATTENDANCE(amuse. & rec.) DPT:387
GED: 2 SVP: 2 EC: B 2 4 PA: L 4 7

Records attendance at theatrical performances, motion picture shows or athletic events:
Tallies and records number of patrons entering entertainment establishment, using hand counter, to obtain information on which payment for services is based. Stands outside theatre entrance to record attendance at theatrical performances, motion picture shows or athletic events. Forwards tally sheet of patrons entering establishment to manager for verification against number of tickets sold.
May enter establishment as patron to assess attitude and performance of personnel, cleanliness and functioning of establishment, and report findings to manager.

414-OFFICE MACHINE AND ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS

This minor group includes occupations primarily concerned with operating office machines and electronic data-processing equipment. These occupations are classified in the following unit groups:

- 4140 Supervisors, Office Machine and Electronic
Data-Processing Equipment Operators**
- 4141 Office Machine Operators**
- 4143 Electronic Data-Processing Equipment
Operators**

4140-SUPERVISORS, OFFICE MACHINE AND ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of workers primarily engaged in operating office machines and electronic data-processing equipment for classifying, posting, computing, and transferring data; recording, extracting, comparing and reporting information; reproducing copies; preparing mail for distribution; and counting, wrapping and sorting coins. Supervisors of stenographic and typing occupations are classified in Unit Group 4110, SUPERVISORS, STENOGRAPHIC AND TYPING OCCUPATIONS.

**4140-110 SUPERVISOR, ELECTRONIC DATA-
PROCESSING EQUIPMENT
OPERATORS**(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in operating electronic and electro-mechanical machines that record, store, process and transcribe data from punch cards, paper and magnetic tape or

other sources, solve mathematical, engineering or technical problems, and keep records and supply data (Unit Group 4143):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

**4140-114 SUPERVISOR, OFFICE-MACHINE
OPERATORS**(clerical) DPT:138

Supervises and co-ordinates activities of personnel engaged in operating, bookkeeping, billing, calculating, accounting, coding, duplicating, photocopying, embossing, addressing, folding and inserting, coin sorting, counting and wrapping, and other office machines, for recording, computing and classifying data about business transactions or activities; reproducing copies; preparing mail for distribution and performing other general office duties, (Unit Group 4141):
Performs duties as described under master title 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in operating a particular type of office machine, and be designated accordingly; for example,
Supervisor, Billing-Machine Operators
Supervisor, Blueprinting-Machine Operators
Supervisor, Bookkeeping-Machine Operators
Supervisor, Duplicating-Machine Operators

4141-OFFICE MACHINE OPERATORS

This unit group includes occupations primarily concerned with operating bookkeeping, billing, adding, calculating, accounting, coding, duplicating, photocopying, embossing, addressing, folding and inserting, coin sorting, counting and wrapping and other office machines, for recording, computing and classifying data about business transactions or activities; reproducing copies; preparing mail for distribution; and performing other general office duties. Occupations concerned with operating electronic data-processing equipment are classified in Unit Group 4143, ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS, and typing occupations are classified in Unit Group 4113, TYPISTS AND CLERK-TYPISTS.

4141-110 BOOKKEEPING-MACHINE OPERATOR(clerical) DPT:384
accounting-machine operator.
GED: 4 SVP: 5 EC: 1 PA: S 4 7

Records financial transactions of establishment, using bookkeeping machine:
Sorts documents to be posted; such as, cheques and debit and credit items. Selects and places bookkeeping form on writing surface of machine, and sets carriage. Depresses keys of machine keyboard to record identifying headings and data, and to calculate and post totals, net amounts, and other computations. Verifies entries, and summarizes and balances totals to ensure accuracy. Prepares periodic trial balances and other statistical information as required. Operates other office machines, such as adding and calculating machines.
May keep one phase or section of complete set of records pertaining to business transactions of establishment and be designated accordingly.

4141-114 CRYPTOGRAPHIC-MACHINE OPERATOR(clerical) DPT:584
GED: 4 SVP: 5 EC: 1 PA: S 4 7

Operates cryptographic equipment to code, transmit and decode classified messages for law-enforcement agencies, diplomatic missions or other government services, and business organizations:
Types plain-text data on keyboard of manual or automatic machine which encrypts and transmits message, or on semi-automatic machine which converts plain text into taped code for transmission via teletype machine or other electronic device. Feeds incoming tape into decoding device on semi-automatic machine and distributes coded messages. Resolves garbled or undecipherable messages, using specified procedures and equipment or requests retransmission of messages.
May operate teletype or teleprinter equipment to transmit messages.

4141-118 PHOTOCOMPOSING-MACHINE-PERFORATOR OPERATOR(print. & pub.) DPT:584
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Operates keyboard of photocomposing-machine perforator that transcribes data onto tape by perforating it to permit composition of text by automatic-composing machine:
Inserts roll of tape in perforator magazine, clips copy in holder and pushes starter switch. Codes tape for photocomposing machine by turning indicator knobs to control counting mechanism, select line length, type font and film feed as specified on copy. Depresses keys on keyboard to spell out data in the form of perforations. Removes perforated tape from take-up spool of perforator.

4141-122 PROOF-MACHINE OPERATOR(clerical) DPT:384
clearing clerk.
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Sorts, records and proves records of bank transactions, such as cheques, deposit slips and withdrawal slips, using proof machine:
Examines items and depresses appropriate machine keys to sort items into various categories and simultaneously list amount of transaction on batch and master control tapes. Positions items in machine to be endorsed and grouped automatically. Totals tapes and locates, corrects and records errors. Operates equipment which photographs cheques and deposit slips. Examines film to assist in tracing lost items, using projector. Attaches tapes to sorted batches of cheques and prepares

recapitulation sheet. Proves deposits, cheques, debits and credits listed on batch sheet. Takes cheques, drafts and other items to clearing house for exchange or settlement.
May be designated according to trade name of machine used.

4141-126 AUDIT-MACHINE OPERATOR(clerical) DPT:484
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Adds sales slips, using electrically-powered auditing machine:
Computes subtotals for individual sales departments, and types of sales; such as, cash, charge, installment, and lay-away. Totals sales slips of returned items and subtracts from gross sales to determine net sales returns. Verifies daily or periodic balances against predetermined figures.

4141-130 BILLING-MACHINE OPERATOR(clerical) DPT:484
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Prepares statements, bills, and invoices to be sent to customers, itemizing amount customers owe, using billing machines with or without computing devices:
Inserts blank billing sheets in machine and sets carriage. Transcribes data from office records; such as, customer's name, address, and items purchased or services rendered. Calculates totals, net amounts, and discounts by addition, subtraction, and multiplication, and records computations.
May make computations on separate adding and calculating machines.
May be designated according to type of bill prepared.

4141-134 CALCULATING-MACHINE OPERATOR(clerical) DPT:484
calculator operator.
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Computes and records statistical, accounting and other numerical data, using a machine that automatically performs mathematical calculations:
Presses keys of machine keyboard and manipulates levers to add, subtract, multiply, divide, or to obtain square roots. Posts results of calculations to forms or documents; such as, inventories, payrolls, invoices, test reports and statistical summaries.
May verify computations made by other workers. May be designated according to trade name of machine, type of computations made or subject matter.

4141-138 TYPESETTER-PERFORATOR OPERATOR(print. & pub.) DPT:584
perforator operator.
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Operates keyboard of typesetter-perforator machine to copy data from manuscript onto tape used for producing automatic type composition:
Secures roll of tape in machine magazine. Turns adjustment screws to set indicator scale that controls counting mechanism according to type size and width of line to be composed. Positions copy in copyholder and depresses specified keys on keyboard to punch tape. Observes justification pointers on indicator scale to determine when to end line. Removes completed roll of tape for delivery to teletype-setting machines. Transcribes editorial corrections, splices correction tape and feeds tape into computer that produces master control tape.

4141-142 CURRENCY SORTER(clerical) DPT:584
cash-clearing teller; silver teller.
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Sorts and counts paper currency, wraps and bags coins by hand or machine:
Verifies totals of cash parcels received from other banks, tellers and customers by sorting bills and coins by denomination. Inserts them in machine to be automatically counted, bagged or wrapped. Examines currency to detect counterfeit, mutilated or worn bills and coins. Prepares parcels of currency or coins together with accompanying documents for distribution to banks, tellers, customers or vault storage. Prepares large payrolls by sorting currency into required amounts. Operates adding machine to verify totals. Sorts bonds and bond coupons received from other banks, tellers and customers. Assists in preparing daily balances.

4141-146 DUPLICATING-MACHINE OPERATOR(clerical) DPT:682

GED: 3 SVP: 4 EC: 1 PA: L 3 4 7

Operates machine that reproduces data from embossed plates on revolving cylinder or from original copy by one of the following methods:

1. Adjusts feeder and delivery side and bottom guides according to width and length of stock, slackening, moving and tightening guides in position, using wrench. Selects embossed plate or printing chase and sets it up on cylinder of machine. Loads paper in feed tray and adjusts parts; such as, inking rolls or ribbon and feeding mechanism. Starts machine that automatically pushes sheets under revolving cylinder or against flat impression bed of type where paper is printed. 2. Places master copy on end of machine and blank paper in feed tray. Adjusts machine for speed, size of paper and flow of process liquid to moistening pad. Starts machine that pulls blank sheets across moistening pad and transfers image from master copy onto copy sheet.

May type or draw diagram to prepare original copy. May keep record of number of copies made. May be designated according to type of machine operated.

4141-148 BLUEPRINTING-MACHINE OPERATOR(bus. serv.) DPT:684

GED: 3 SVP: 4 EC: 1 PA: L 4 7

Operates machine to make copies (blueprints) of material; such as, documents or drawings:

Examines original copies for translucency. Selects sensitized paper according to colour of line specified in work order and positions original over paper. Moves controls to regulate light intensity and exposure time according to translucency of original and type of sensitized paper. Slides original and sensitized paper into machine to expose and develop print. Examines finished print for specified colour, intensity and sharpness of line. Pushes button to supply machine with potash or ammonia, or manually pours chemical into machine. Turns dial to adjust feed rate.

May make autographic (negative) of original material by covering original with translucent-sensitized paper and coloured filter, and inserting it into machine. May keep record of prints made and issued to departments. May clean machine. May be designated according to trade name of machine operated; for example, Copyflex-Machine Operator, Ozalid Operator

4141-150 MICROFILM-RECORDS SEARCHER(clerical) DPT:684

microfilm operator.

GED: 3 SVP: 4 EC: 1 PA: S 4 7

Searches for and retrieves information from microfilm records:

Finds film cartridge on roll by consulting alphabetical, numerical or some other form of index. Loads either cartridge or roll film manually into microfilm reader or reader-printer. Turns knob to feed film automatically into microfilm reader. Scans film to retrieve information. Records information from film or presses button to have copy made by machine.

4141-154 ADDING-MACHINE OPERATOR(clerical) DPT:484

GED: 3 SVP: 3 EC: 1 PA: S 4 7

Operates adding machine:

Adds and subtracts figures, using electrically-driven or lever-operated machine that automatically computes and records results, usually on paper tape. Copies figures onto records or reports.

4141-158 ADDRESSING-MACHINE OPERATOR(clerical) DPT:582

GED: 3 SVP: 3 EC: 1 PA: L 4

Operates machine that prints addresses, code numbers and similar information on items; such as, envelopes, accounting forms and advertising literature:

Positions plates in machine magazine and places articles; such as, envelopes, billings and lists to be addressed, into loading rack or tray. Sets flow of ink and adjusts guides to fit size of paper and sets stops and selectors so that only certain plates will be printed, using wrench

and pliers. Starts machine that automatically feeds plates through mechanism. Maintains plate file and operates typewriter or embossing machine to make corrections, additions, or changes on plates.

May type statistical lists of plate files and correspondence concerning addressing jobs. May operate other office machines. May be designated according to trade name of machine operated.

4141-162 INTEGRATOR OPERATOR(clerical) DPT:584

GED: 3 SVP: 3 EC: 1 PA: S 4 7

Operates computing machine that integrates temperature, pressure and specific gravity readings to determine volume of gas flow through meters and pipelines of gas company, using meter charts:

Positions chart on chart plate. Starts machine to revolve chart and actuate computing mechanism. Pulls levers and presses pedal to guide pens along static pressure and volume curve lines. Removes chart and records computation on back of chart. Maintains file of integrator reading check sheets.

4141-166 EMBOSSING-MACHINE OPERATOR(clerical) DPT:584

plate embosser.

GED: 2 SVP: 3 EC: 1 PA: S 4 7

Operates electrically powered or manual machine to emboss names and addresses on metallic and nonmetallic plates for use in duplicating or addressing-machines or for identification tags:

Refers to work order or sketch supplied and withdraws appropriate sample from file. Clamps sized blank plate or strip in holder. Turns handwheel to set character or letter die in embossing position and pulls lever to lower die and emboss character on plate or strip. Trips levers or presets automatic controls to space letters, words and lines. Wires tags together and delivers to appropriate work station. Inserts sample plate in frame binder and files alphabetically to maintain record of each plate type.

May operate pantograph type engraving machine to engrave plates. May operate a particular type of embossing machine and be designated accordingly.

4141-170 COIN-MACHINE TENDER(clerical) DPT:585

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that counts, sorts and wraps coins of various denominations:

Lifts bags of coins and dumps them in hopper of machine. Places rolls of counted coins into bags for bank deposit. Keeps record of total money processed.

May insert fittings on coin channels of machine to sort coins according to denominations. May move money to and from cages and vaults, using hand truck.

4141-174 MIMEOGRAPH OPERATOR(clerical) DPT:684

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Operates machine to reproduce handwritten or typewritten matter from stencil:

Pours ink into cylinder reservoir and turns cylinder lever to distribute ink on ink pad. Attaches stencil to cylinder of machine. Selects paper according to colour, size, weight and quality specified, and loads paper onto feed tray. Sets gauges and dial controls to adjust paper feed and cylinder speed, and starts machine. Assembles and staples printed copies. Removes stencil from machine and cleans and files stencil for reuse. Cleans and oils machine and replaces ink pads.

May record number and kind of copies made. May operate machine by turning cylinder manually.

4141-178 ADDRESS-LABELLING-MACHINE TENDER(clerical) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that applies pre-addressed labels to printed material, envelopes or other containers preparatory to mailing:

Adjusts wing (feed guides) to accommodate size of article to be labelled, and places stack of unlabelled articles between guides. Mounts roll of pre-addressed labels on machine spindle. Fills reservoir with water. Operates switch that turns rubber wheel to feed label over roller that applies water, and under blade that automatically cuts

labels from roll and applies label to mailing piece. Removes labelled article from machine and stacks on table.

4141-182 BURSTING-MACHINE TENDER(clerical) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that separates, trims and addresses accounting notices and receipt forms:

Turns knobs to adjust machine to address and separate forms. Turns roller to position pins that grip continuous forms. Starts machine and examines emerging forms for correct imprinting, trimming and separation. Packs stacked forms into boxes.

May label boxes for mailing. May change machine ribbon. May tend machine that inserts printed matter into envelopes.

4141-184 ENVELOPE-SEALING AND IMPRINTING MACHINE TENDER(clerical) DPT:885
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that automatically imprints postmark on, and seals envelopes:

Arranges envelopes so that flaps are open and upturned. Inserts material for mailing into envelopes by hand. Adjusts machine to thickness of material in envelope. Turns indicator dial to specified letters and date numbers to be imprinted. Starts machine and positions envelopes on feed tray for imprinting and sealing. Removes postmarked sealed envelopes.

4141-186 EXCISE-STAMP CANCELLING MACHINE TENDER(clerical) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Tends stamp-cancelling machine to cancel excise stamps:

Writes requisition for supplies; such as, stamps, ink, and letters, and selects type required for stamp-cancelling machine. Prepares machine for use, making adjustments to automatic feeding-tray and manually turns set screws. Fills reservoir of machine with ink, using funnel and ink container. Puts excise stamp sheets in automatic feeding-tray, manually. Starts and observes machine to detect blockage at feeding and delivery ends. Sets cutter to required size, by turning adjustment screws. Lowers blade of cutter, to cut stamps to size. Delivers cancelled stamps to packing department.

4141-190 INSERTING-MACHINE TENDER(clerical) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that inserts printed matter; such as, letters or booklets into folders or envelopes:

Stacks quantities of materials to be inserted in feedboxes of machine and sets feeders with hand screws to accommodate thickness of material. Stacks covers in feedbox and sets feeder to thickness. Starts machine and replenishes feedboxes with inserts and covers.

May perform duties of 4173-126 MAIL CLERK (clerical)

4141-194 PHOTOCOPYING-MACHINE TENDER(clerical) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine to reproduce typewritten or handwritten matter, or prints, from original copy or aperture card:

Places original copy or card on glass plate in machine or viewer, and places blank paper on loading tray. Sets control switch for number of copies. Pushes button which starts machine that transfers image of original to blank paper by photographic and static electricity process.

May clean machine. May be designated according to machine operated, Photographic-Machine Tender

4141-198 STENCIL-CUTTER TENDER(clerical) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that automatically cuts stencils for mimeograph- copy duplicating of printed material, graphs and tables:

Places original copy and blank stencil around separate cylinders. Sets controls and turns on machine that scans original copy and cuts blank stencil. Removes stencil after machine completes operation.

4141-202 MICROFILM MOUNTER(bus. serv.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Mounts microfilm into Electronic Data Processing cards (data cards) by one of the following methods:

1. Tends machine that automatically mounts developed microfilm into cards. Inserts roll of microfilm into machine. Fills hopper with presorted cards. Starts machine that cuts roll of microfilm into sections and mounts microfilm into hole on card. 2. Mounts roll of microfilm manually into Electronic Data Processing cards. Aligns visually, inspects and verifies microfilm and index card to ensure that they are matched before actual mounting takes place. Inserts microfilm into hole on card. Checks finally to make certain that cards are in sequence.

4141-206 ADDRESS-PLATE INSERTER(clerical) DPT:687
GED: 2 SVP: 1 EC: 1 PA: L 4 7

Removes and inserts embossed addressing plates which are linked together in a chain and wound on a reel:

Places reel of plates to be examined and an empty reel on spindle at opposite ends of rewinding device. Manually winds linked-embossed plates from loaded reel, stopping when necessary to unhook connecting links, and insert additional plates or remove incorrect or out-of- date plates, according to instructions on worksheet.

May operate addressing-machines to address cards, envelopes or related materials.

4143-ELECTRONIC DATA-PROCESSING EQUIPMENT OPERATORS

This unit group includes occupations concerned with operating electronic and electromechanical machines that record, store, process, and transcribe data to and from punch cards, paper tape, magnetic tape or other sources, or are used to solve mathematical, engineering or technical problems, and to print and supply data. Occupations concerned with operating bookkeeping and similar machines are classified in Unit Group 4141, OFFICE MACHINE OPERATORS.

4143-110 COMPUTER OPERATOR(clerical) DPT:682
console operator; digital-computer operator.
GED: 4 SVP: 6 EC: 1 PA: L 4 7

Operates and controls electronic digital computer to process business, scientific, engineering, or other data:

Sets control switches on computer and peripheral equipment; such as, external memory, data communicating, synchronizing, input and output recording, or display devices, to integrate and operate equipment according to program and data requirements specified in written operating instructions. Selects and loads input and output units with materials; such as, disks, tapes or punch cards and printout forms, for operating runs, or oversees operators of peripheral equipment who perform these functions. Sets switches to clear system and start operation of equipment. Observes equipment and control panel on computer console for error lights, verification printouts, error messages, stoppages and faulty output. Stores commands into computer console, according to predetermined instructions, to correct error or failure and resume operations. Notifies supervisor of errors or equipment stoppage. Clears unit at end of operating run and reviews schedule to determine next assignment. Records operating data such as in-use and down time.

May type alternate commands into central control unit of computer. May wire control panels of peripheral equipment or insert program cards. May control computer to provide input and output service for another computer.

4143-114 COMPUTER-PERIPHERAL EQUIPMENT OPERATOR(clerical) DPT:382
unit record equipment operator.
GED: 4 SVP: 5 EC: 1 PA: L 4 6 7

Operates a variety of computer-peripheral (ancillary) equipment that converts data from one form to another, and sorts, tabulates, reads and prints data, by performing any combination of the following duties:

Mounts and positions materials; such as, reels of magnetic tape and disks onto spindles, decks of cards into hoppers, bank cheques into magnetic ink reader sorter, notices in optical scanner and carriage tape or output forms into printing devices. Sets quides, keys and switches according to oral and written instructions, to prepare equipment for operation. Selects specified wired control panels or printed circuit boards, or wires panel according to diagrams, and inserts them into machines. Presses switches to start off-line machines such as card tape converters, or to interconnect on-line equipment, such as tape or card computer input and output devices, and high-speed printer or other output recorder. Watches machines and error lights to detect machine malfunction. Notifies supervisor of malfunctioning or stoppage of machines or faulty output of data. Unloads cards, disks or reels of tape from machine and identifies and routes them to library or storage. Separates and sorts printed output forms, using sorting machine, to prepare them for distribution. May confine activities to one type of machine and be designated accordingly. May operate computer console in absence of computer operator.

4143-118 MAGNETIC INK CHARACTER RECOGNITION CLERK(clerical) DPT:384 GED: 3 SVP: 5 EC: I 5 PA: S 4 7

Operates accounting machines and keeps related clerical records in connection with magnetic ink character recognition (MICR) cheques and vouchers:
Operates machine to balance listings of incoming bank transactions such as cheques and vouchers and encode with MICR common machine language. Sorts MICR encoded cheques and vouchers using electronic sorting machine. Operates electric adding machine to verify total and record figures on documents such as cheques and deposit slips. Photographs cheques and vouchers being sent outside bank's record control system using copying machine. Keeps daily statistics on computer time used in bank computer centre. Computes handling charges on cheques drawn on foreign banks using data captured and recorded during MICR sorting.
May supervise a group of MICR clerks.

4143-122 VERIFIER OPERATOR(clerical) DPT:684 GED: 3 SVP: 5 EC: I PA: S 4 7

Verifies accuracy of data punched on tabulating cards (punch cards), using keyboard type machine that rejects incorrectly punched cards:
Places punched cards in machine. Depresses keys in sequence originally used when cards were punched on key punch machine. Removes incorrectly punched cards as indicated by light, or key that will not depress.
May punch corrected card using key punch machine.

4143-126 CARD-TAPE-CONVERTER OPERATOR(clerical) DPT:384 GED: 3 SVP: 4 EC: I PA: S 4 7

Operates machines that automatically transcribe data from punch cards to reels of tape, or from tape to punch cards for use in automatic data-processing equipment:
Wires plugboard, to make circuit connections according to prepared diagrams, to print data in desired format. Mounts reels of tape on spindles or tape drives, places stacks of punch cards in hopper, and starts reading and recording machines. Observes machines in operation to ensure that there is no malfunctioning. Marks identification on reels of tape or drawers of punch cards at end of run, and keeps control sheet.
May operate other electronic data-processing machines such as, high-speed printer.

4143-130 HIGH-SPEED-PRINTER OPERATOR(clerical) DPT:384 GED: 3 SVP: 4 EC: I PA: L 4 7

Operates high-speed printing machine to convert into printed records, scientific, engineering or business information previously recorded on tape:
Wires plugboard, making circuit connections according to prepared

diagram or inserts program card to obtain specified data in desired format. Mounts tape reels on spindles and positions in printer, paper stock on which data are to be recorded. Starts machine and observes printing for format and legibility, and panel lights for indications of computational errors. Verifies plugboard wiring or reviews program card to correct printing errors. Removes printed sheets from machine and stores reels of tape.
May transfer data from punch cards to reels of magnetic tape or from reels of magnetic tape to punch cards.

4143-134 KEY-PUNCH OPERATOR(clerical) DPT:584 card-punch operator. GED: 3 SVP: 4 EC: I PA: S 4 7

Operates alphabetic and numeric key-punch machine, similar in operation to that of electric typewriter, to transcribe data from source material onto punch cards:
Attaches punched program card around machine drum to control duplication and spacing of constant data. Loads machine with decks of punch cards. Moves switches and depresses keys to select automatic or manual duplication and spacing, to select alphabetic or numeric punching and transfer cards through machine stations. Depresses keys to transcribe data in prescribed sequence from source material into perforations on cards. Inserts previously punched card into card gauge to verify registration of punches. Observes machine to detect faulty feeding, positioning, ejecting, duplicating, skipping, punching, or other mechanical malfunctions, and notifies supervisor of defects. Removes jammed cards by pressing pressure release lever.
May tend machines that automatically sort, merge or match punch cards into specified groups. May convert alphabetic, numeric and symbolic data into coded form on punch cards or tapes, using special purpose electric typewriter. May perform verifying duties and be designated accordingly; for example, Typist, Data Processing Verifier Operator

4143-138 TABULATING-MACHINE OPERATOR(clerical) DPT:684 GED: 3 SVP: 4 EC: I PA: L 4 7

Processes data from punched cards into printed records by operating tabulating machines:
Wires and installs tabulating-machine plugboard (control panel), using wrenches and screwdriver. Places cards in hoppers in proper sequence and starts machine. Checks operation of machine to ensure that it is running smoothly and removes jammed cards. Passes processed cards to next step of operation.
May tend machines that perform individual function, such as sorting, interpreting, reproducing and collecting. May maintain files of punched cards.

4143-142 REMOTE COMPUTER TERMINAL OPERATOR(clerical) DPT:684 GED: 3 SVP: 3 EC: I PA: S 4 7

Operates electric typewriter to transmit data to computer:
Depresses special key to signal computer at beginning of transmission. Types data according to copy, using series of code numbers for storage purposes. Corrects errors and makes changes according to predetermined procedures. Keeps record of data transmitted from terminal. Signals computer by code to retrieve data. Obtains daily storage report from computer to confirm accuracy of data stored. Keeps log composed of messages sent to and received from computer.

4143-146 SORTING-MACHINE TENDER(clerical) DPT:685 GED: 3 SVP: 3 EC: I PA: L 4 7

Tends machine that automatically sorts perforated tabulating cards into specified groups:
Collects cards to be sorted, from storage area and places them in feed box. Pushes buttons on sorting control panel to regulate sorting process. Starts machine and looks through holes to verify sorting. Removes sorted cards from bins and returns them to storage area. Removes jammed cards to clear machine.
May operate tabulating or verifying machine.

415-MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS

This minor group includes occupations concerned with examining orders for goods and services; receiving, storing, scheduling, issuing, shipping, requisitioning and accounting for material in store or in use. Activities include: assigning locations and space to items; verifying quantity, identity, condition and value; binning, picking, stacking and counting; preparing or committing stocks for shipment; taking inventory of stock; replenishing depleted items; filling orders; and issuing tools, equipment or material to workers. These occupations are classified in the following unit groups:

- 4150 Supervisors: Material Recording, Scheduling and Distributing Occupations**
- 4151 Production Clerks**
- 4153 Shipping and Receiving Clerks**
- 4155 Stock Clerks and Related Occupations**
- 4157 Weighers**
- 4159 Material Recording, Scheduling and Distributing Occupations, n.e.c.**

4150-SUPERVISORS: MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of workers engaged in receiving, storing, issuing, shipping, requisitioning and accounting for materials; expediting flow of materials and preparing work and production schedules.

4150-110 SUPERVISOR, PRODUCTION CLERKS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in expediting flow of work and materials, examining orders for goods and services; preparing work or production schedules; routing parts for fabrication or repair and compiling records and reports, (Unit Group 4141): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a particular activity and be designated accordingly; for example, Job-Order Clerks Supervisor
Material Clerks Supervisor
Schedule Clerks Supervisor

4150-114 SUPERVISOR, SHIPPING AND RECEIVING CLERKS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in assembling, packing, addressing, stamping, loading and shipping merchandise or material, and receiving, unpacking, sorting, verifying and recording incoming merchandise or materials, (Unit Group 4153): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a particular activity and be designated accordingly; for example, Receiving Clerks Supervisor
Shipping Clerks Supervisor

4150-118 SUPERVISOR, STOCK CLERKS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in receiving, storing and distributing supplies, material and equipment; taking inventories, estimating future requirements, keeping records and pricing and requisitioning stock, (Unit Group 4155): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example, Inventory Control Supervisor
Linen Room Supervisor(laund., clean. & press.)
Tool-Crib Supervisor

4150-199 OTHER SUPERVISORS, MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS

This group includes material recording, scheduling and distributing supervisors, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in marking prices on goods and checking tickets. Typical examples of occupational titles covered by this residual group definition are:
Supervisor, Price Markers(ret. trade; whole. trade)
Supervisor, Ticket Checkers(tobacco)

4151-PRODUCTION CLERKS

This unit group includes occupations concerned with co-ordinating and expediting the flow of work and materials; examining orders for goods and services; preparing work or production schedules to ensure time limits are met; routing and delivering parts for fabricating or repair operations to ensure production quotas are maintained; and compiling records and reports.

4151-110 PRODUCTION CO-ORDINATOR(clerical) DPT:168 production expeditor; production scheduler. GED: 4 SVP: 7 EC: 1 PA: S 4 5 6 7

Co-ordinates and expedites flow of work within or between departments of manufacturing plant according to production schedule:
Reviews production schedule and work orders and reschedules processes to eliminate duplicate machine setups. Distributes work orders to departments denoting number, type and proposed completion date of units to be produced. Confers with department supervisors to determine progress of work and completion and delivery dates. Suggests assembly and disassembly of stock parts or assemblies to provide spare parts during component shortages or production delays. Compiles reports on progress of work and machine, tool and equipment failures, using typewriter, to inform production planning department of production delays. Informs department supervisor of changes in processing methods received from engineering departments.

4151-114 MATERIAL CO-ORDINATOR(clerical) DPT:168
material checker; stock chaser.
 GED: 4 SVP: 6 EC: 1 5 PA: L 5 6 7

Co-ordinates and expedites flow of materials, parts and assemblies within or between departments according to production and shipping schedules or departmental priorities:
 Reviews production schedules and confers with supervisors to determine if more material is required, to arrange for repair and assembly of material and its transportation to various departments, and to establish completion date for production of material. Notifies production or manufacturing departments of anticipated workload and sequence in which material will be processed. Observes progress of work flow and anticipates any disruptions on production line which might be caused by machine speed, excessive scrap or incorrect scheduling. Informs production control department of flow disruptions and requests direction.

4151-118 MOTOR VEHICLE REPAIR CO-ORDINATOR
 (motor vehicle) DPT:168
 GED: 4 SVP: 6 EC: 1 PA: S 4 5 6 7

Co-ordinates activities of workers engaged in repairing and servicing automobiles:
 Receives work order and routes automobiles to motor department, body and fender shop, paint shop, lubrication shop or specialist worker, using public address or intercom system or telephone. Controls and expedites work in various parts of establishment to ensure that all work proceeds according to schedule. Verifies that repair and service work is completed, and determines cost. Informs customer when vehicle is ready.

4151-122 CONTROL CLERK, ADVERTISING(bus. serv.) DPT:367
 GED: 4 SVP: 6 EC: 1 PA: S 5 6 7

Compiles and examines work records on production in advertising agency, to control completion of art work, copy and layouts:
 Records date sent and date expected for printing and art work. Advises agency personnel to speed production when there are changes in scheduling. Keeps contract file of work in progress, and ensures completion of work according to contract specifications. Examines current work-flow control procedures and formulates new systems for completing work prior to deadline.

4151-126 PROGRAM SCHEDULER(broadcast., motion pic. & stage) DPT:364
 GED: 4 SVP: 5 EC: 1 PA: S 4 7

Compiles daily operations' schedules for radio or television programming:
 Telephones distributors to get information and fits this information into schedule to fill hours of day and night with programming. Compiles information locally and from network to get complete program schedule. Notes any deviations from schedule in book, for future insertion in newspapers and magazines. Prepares and types program schedule and distributes it to newspapers, magazines and others on circulation list.

4151-130 CONTROL CLERK, DATA-PROCESSING (clerical) DPT:367
 GED: 4 SVP: 5 EC: 1 PA: S 4 7

Prepares and assembles complete input to electronic-data-processing systems and performs control duties to route assignments through datacentre:
 Assigns production codes, and schedules due dates for material going to datacentre. Reviews instructions to determine unique features or special work required by customer. Reads routing cards to determine scheduling, priority and sequence for processing data. Ensures presence of all documents by referring to accompanying transit slip. Assembles complete set of source material to be card-punched, such as control totals, tapes, drums and disks, and routes them through appropriate departments for data processing. Records all incoming and outgoing material processed in datacentre. Checks progress of project by conferring with machine operators, and by using control sheets showing locations, priority and scheduling to ensure that material is ready on time. Provides input such as machine times to

determine amount of customer's bill. Sends completed project to quality control section and assists in checking, editing, balancing and binding reports for shipment to customer.
 May operate various unit-record and computing systems as part of job preparation and data-balancing operation.

4151-134 PRODUCTION CLERK(clerical) DPT:368
 GED: 4 SVP: 5 EC: 1 PA: L 5 7

Compiles data for production operations' schedules from customers' orders, production estimates and perpetual inventory:
 Examines customer's order and inventory records to determine production needs to fill order. Prepares order-completion schedules in advance for each department. Keeps records of all material shipped to destination. Surveys progress of production by examining work tickets or other progress control data, and issues production runs. Proposes amendment of production operation schedules in the light of actual production performance. Keeps records of machine performance, production rates and outputs. Prepares reports on progress for information of management.

4151-138 MATERIAL ESTIMATOR, CONSTRUCTION
 (clerical) DPT:388
 GED: 4 SVP: 5 EC: 1 PA: S 4 7

Prepares estimates of amount of materials and labour required for construction and repair projects:
 Reads technical drawings and other plans and records kind, size, amount, grade and place of delivery of needed materials for building construction projects. Lists suppliers and quoted prices for each type of material used. Prepares schedules showing promised delivery date for each type of material. Records data on materials received and used on project.

4151-142 OVERHAUL PLANNER(air & space-craft) DPT:388
 GED: 4 SVP: 5 EC: 1 PA: S 4 7

Compiles record of aircraft assemblies and components returned for repairs, modification, or overhaul, and schedules work on units to meet production dates:
 Keeps status records on all units within the department as work progresses. Prepares forms to initiate repair work. Keeps records of units sent to other departments for further work on overhaul.

4151-146 RECORDER, STEEL MILL(clerical) DPT:367
 GED: 3 SVP: 5 EC: 1 3 5 6 PA: L 4 5 6 7

Records and collates operational data concerning steel production to ensure that processing procedures are carried out according to specifications:
 Reads production, heating, or rolling schedule to determine processing specifications. Distributes copies of orders to operating personnel and notifies them of order changes by telephone. Observes processing of material and reads gauges, clocks, and automatic recorders. Records and compares information with schedules to determine variations from processing specifications. Communicates with supervisory personnel using intercom, or telephone, to report deviations from processing instructions. Prepares periodic statistical reports on operations indicating data; such as, processing delays and deviations, and production figures.
 May record data concerning a particular aspect of production in steel mill and be designated accordingly; for example,
 Blooming-Mill Recorder
 Open-Hearth-Pit Recorder
 Oxygen-Furnace-Pit Recorder
 Slabbing-Mill Recorder
 Soaking-Pit Recorder
 Structural-Mill Recorder

4151-150 JOB ORDER CLERK, MANUFACTURING
 (clerical) DPT:368
 GED: 3 SVP: 5 EC: 1 PA: S 4 7

Compiles detailed worksheets from customer's order and other specifications, for use as guides in assembly or manufacture of products in plant or factory:
 Compares customer's purchase order with specifications. Enters data; such as, quality, quantity, type, colour, size of material, machines to be

used in production, sequence of operations and expected completion date, on worksheet. Attaches drawings, tracings, other specifications and priority for delivery to worksheet and forwards to department concerned for processing. Initiates purchase requisitions to obtain required material for production. Contacts plant or factory to determine progress on work order and revises schedules. Computes production totals according to machine or shift, manually or using calculating machine.

May keep inventory records, file correspondence, type reports and notify purchasing department of depleted material and supplies.

4151-154 CLERK, CABLE TRANSFER(telecom.) DPT:388
GED: 3 SVP: 5 EC: I PA: S 4 7

Prepares authorizations and maintains records related to rewiring of telephone lines, and compiles data for statistical reports: Prepares work orders from engineering plans for use by construction department. Prepares statistical reports and assembles data from records for subscriber-analysis studies and for engineering department. Brings records up-to-date, noting subscriber's address or other changes in service, to facilitate rewiring of telephone lines.

4151-158 INDUSTRIAL-ORDER-COMPLETION CLERK
(clerical) DPT:368
GED: 4 SVP: 4 EC: I PA: L 4 5 6 7

Verifies completion of industrial orders received and conformance of product to specifications:

Compares technical drawings and instructions with contract or order to ascertain that product meets specifications. Communicates with plant installation and delivery personnel to verify delivery of product. Prepares completion slip after order is filled. Compiles records of outstanding items not received or delivered.

4151-162 PROGRESS CLERK, CONSTRUCTION(clerical) DPT:364
GED: 3 SVP: 4 EC: I PA: L 4 7

Records and reports progress of construction work:

Reviews such information as daily record of activities, records of quantities of material received and used and data from various workers. Prepares and types reports. Examines and measures work completed and records progress to aid in scheduling work and material requirements. Accepts delivery slips and verifies material received from suppliers.

May collect employees' time cards and take them to office for processing.

4151-166 AIRCRAFT-RECORDS CLERK(air & space-craft; air trans.) DPT:368
technical-records clerk.
GED: 3 SVP: 4 EC: I PA: S 4 7

Keeps up-to-date records showing amount of time aircraft is in use, and indicates remaining life of component parts:

Computes and posts amount of time-aircraft and their individual parts are in use and transcribes information from periodic reports to permanent records. Maintains wallchart showing remaining life of aircraft components. Ensures that new or overhauled components will be available when replacements are needed. Notifies inspection department and prepares work orders for overhaul or repair of aircraft or components, using printed forms and information from permanent records. Checks entries in log books to ensure accuracy. Accounts for labour charges for each job by transcribing information from time cards to work orders.

4151-170 ASSIGNMENT CLERK(telecom.) DPT:368
GED: 3 SVP: 4 EC: I PA: S 4 7

Assigns telephone lines and numbers and maintains records for control purposes:

Assigns line, cable and central-office facilities to be used in providing and maintaining telephone or telegraph services. Keeps record of line, cable and central-office facilities. Initiates changes in assignment and arrangement of facilities, working from records, to secure maximum usage and efficiency of equipment. Requests field investigation where office records do not indicate available facilities for subscriber service.

Sends list of new numbers to service department, information operators and directory- compilation personnel for action.

4151-174 EXPEDITER, PURCHASING(clerical) DPT:368
GED: 3 SVP: 4 EC: I PA: S 4 5 6

Ensures that merchandise, supplies or equipment are shipped by vendor on designated shipping date:

Contacts vendor by mail or phone to verify shipment of goods on promised date, or to ensure that goods will be shipped when promised. Arranges for distribution of materials upon arrival. Contacts vendor to requisition materials. Indicates date and time of shipment or delivery on work orders.

May weigh and record weight and pack or unpack material. May inspect products for quality and quantity to assure adherence to specifications.

4151-178 SERVICE-WORK-ORDER CLERK(clerical; elec. power; utilities, n.e.c.) DPT:368
service clerk.
GED: 3 SVP: 4 EC: I PA: S 4 5 6 7

Prepares and controls work orders for purposes; such as, provision of gas or electric services, or installation and repair of customers' appliances:

Records information; such as, name and address of customer, type and size of meter or appliance to be installed or repaired, and dates of servicing, inspection or disconnection. Sorts and routes work orders and dispatches service crew. Prepares list of each type of order for use as control record. Calls customer to arrange time for installing or repairing utility or appliance, or to ensure satisfactory performance of repaired item. Checks order to ensure correct charge to customer, and writes or types bill or statement. Maintains map showing service availability. Answers inquiries about work progress from customer or other company department.

May be designated according to type of work order prepared; for example, Appliance-Repair Clerk
Meter-Records Clerk

4151-182 VEHICLE-SERVICE SCHEDULER(clerical) DPT:368
dispatcher maintenance.
GED: 3 SVP: 4 EC: I PA: S 4 7

Schedules lubrication, inspection and running repairs to vehicles such as buses, cars, street cars and trucks in garage or repair shop:

Schedules vehicles for lubrication, inspection or repairs based on date of last lubrication, mileage travelled, estimate of future daily mileage, or urgency of repairs. Verifies availability of garage facilities from repair shop personnel. Positions marker pins under appropriate dates on schedule display board, opposite vehicle numbers, to indicate to equipment department when vehicles are due for servicing.

4151-186 RECORDING CLERK, CASTINGS(iron & steel) DPT:487
GED: 3 SVP: 4 EC: I 3 5 6 7 PA:L 4 7

Registers heat (crucible) numbers, composition of alloys and identification of castings poured from each heat, and maintains production records:

Calculates percentage of each metal contained in alloys and makes entry on production sheet according to standard formula and weight of alloy poured. Stamps heat number on metal tags, consulting heat charts and using hand-operated press or hand punch and hammer. Sticks end of tag wire into metal before it solidifies to identify each casting, using metal tongs.

4151-190 SCHEDULE CLERK(print. & pub.) DPT:588
GED: 3 SVP: 4 EC: I PA: S 4 7

Prepares production schedules for advertising or printing orders:

Prepares schedule showing information; such as, advertiser's name, size of advertisement, date and number of times to be published, page and position specified. Compares new-printing order with former order, if applicable, and records changes in format; such as, size or colour of sheet and contents of material. Attaches prepared form to assembled material and sends material for printing and publishing.

4151-192 ORDER CLERK, PRINTING PLATES (print. & pub.) DPT:367
GED: 3 SVP: 3 EC: I PA: S 4 5 6 7

Reads and reviews incoming orders for new or duplicate printing plates to ensure they are complete, according to customers' instructions, and discusses orders with customers:

Writes orders received from customers in person or by telephone, for duplicate or new printing plates. Discusses problems; such as, variations in materials supplied, and delays that arise during production. Ensures that plates held in stock are in satisfactory condition for making proofs. Compares proofs with customers' copies of orders and instructions, and inspects outgoing work for compliance with specifications.

4151-194 ESTIMATOR, FABRIC(garment & fabric) DPT:484
GED: 3 SVP: 3 EC: I PA: S 7

Computes amount of fabric required and determines number and type of accessories such as belts, linings, buttons and labels needed in manufacture of garments:

Reads job orders or cutting tickets to determine quantity of garments, sizes, styles and trimming. Computes number of yards of fabric to produce specified style of garment in various sizes, using size chart. Types or writes copies of cutting tickets and orders for various supplies of fabric.

4151-198 TALLYMAN(clerical) DPT:567
GED: 2 SVP: 2 EC: B PA: L 4 7

Records number of units of material, products or other articles received, transferred or produced, performing any combination of the following duties:

Observes and counts material or records information called out by other worker. Records number and kind of defects on unsatisfactory units, for quality control purposes. Prepares, signs and attaches tally sheets to items checked. Piles predetermined number of boxes on skid for closing. Examines containers to ensure that workers fill them to specified level and records number filled. Marks containers to identify type, quality and quantity.

May be concerned with tallying a specific item, and be designated accordingly; for example, Checker, Agricultural Produce Tallyman, Lumber

4151-202 TICKET PREPARER, MANUFACTURING (clerical) DPT:587
GED: 2 SVP: 2 EC: I PA: L 4 7

Prepares tickets or work cards for production department, according to schedules or worksheets:

Copies specifications, onto work tickets or cards, from master schedule which lists parts to be used in manufacturing product, or outlines instructions such as type, length and width of material required. Batches tickets manually and delivers them to other workers or gives them to service man for delivery. Records production data on work ticket or cards. Stamps identifying information, such as lot, number, size and date, on parts manufactured or material used.

May keep record of work tickets for computation of workers' earnings.

4153-SHIPPING AND RECEIVING CLERKS

This unit group includes occupations concerned with assembling, packing, addressing, stamping, loading and shipping goods; and receiving, unpacking, sorting, verifying and recording incoming goods. Occupations primarily concerned with storing, distributing, issuing, taking inventory and requisitioning stock are classified in Unit Group 4155, STOCK CLERKS AND RELATED OCCUPATIONS.

4153-110 IMPORT-FREIGHT CLERK(water trans.) DPT:364
GED: 3 SVP: 5 EC: I PA: S 4 7

Compiles documents on incoming cargo shipments to facilitate removal of cargo from dock, and prepares bill for shipping charges:

Examines ship's manifest (list of cargo) and bills of lading to determine work procedures for releasing cargo. Contacts terminal employees by telephone to determine when cargo will be available for removal from dock. Notifies consignee or his agent, by letter or other means, of arrival dates of shipment, customs clearance requirements and tonnage of shipment. Stamps bill of lading in order that cargo may be removed from dock. Computes from bills of lading, shipping, storage and demurrage charges, using calculator. Prepares bill for charges and submits it to accounting department for collection. Checks bill of lading against enclosure slip, and converts rates from foreign exchange into dollars. Prepares photocopies of bills of lading, advice notes, customs and other documents on duplicating machine to mail out to customers.

4153-114 EXPORT-BOOKING CLERK(water trans.) DPT:367
GED: 3 SVP: 5 EC: I PA: S 4 7

Books outbound freight shipments on company's ships to ensure capacity cargo for each ship:

Ascertain from shipper, type, tonnage, destination and shipping date to determine ship in which to book cargo. Consults booking sheet to ascertain if space is available for shipment. Informs shipper, by letter or other means, of name of ship on which cargo is booked, date of sailing and time to deliver shipment to dock. Records booking of cargo on control sheet, listing tonnage and type of cargo, and shipper's name and destination.

4153-118 SHIPPING AND RECEIVING CLERK (clerical) DPT:367
GED: 3 SVP: 5 EC: I PA: M 4 7

Ships and receives goods and keeps pertinent records:

Determines method of shipment, utilizing knowledge of shipping procedures, routes, and rates 4153-126 SHIPPING CLERK (clerical). Compares quantity and identification numbers of goods against orders to ensure accuracy. Assembles wooden and cardboard containers or selects preassembled containers to ship goods. Affixes identifying information and shipping instruction on containers, using staplers, string, or stencils. Arranges for shipment of goods by contacting company or outside carriers, using telephone. Prepares bills of lading by hand or using typewriter. Keeps files of shipping records. Verifies receipt of shipments against bills of lading, invoices, or other records 4153-122 RECEIVING CLERK (clerical). Records shortages and rejects damaged goods. Routes goods to stockroom or department concerned.

May direct others in the packing and unpacking of goods. May oversee the loading and unloading of goods onto or from vehicles and railroad cars. May take or assist in taking inventories of goods in storage. May operate equipment, such as handtruck, fork-lift, elevator, or conveyor to transport goods.

4153-122 RECEIVING CLERK(clerical) DPT:367
receiving checker; receiving-room clerk.
GED: 3 SVP: 4 EC: I PA: M 4 7

Receives, unpacks and examines goods and verifies shipments received against bills of lading, invoices and other records:

Examines incoming shipments to detect defects and sorts items according to extent of defect. Contacts sender to rectify damages or shortages and keeps record of factors causing goods to be returned. Attaches identification data to article. Issues receipts and keeps records of goods received. Routes goods received to various departments.

May direct material handlers and other workers in receiving department. May be designated according to one aspect of receiving; for example,

Freight-Receiving Clerk
Invoice-Control Clerk
Returned-Goods-Receiving Clerk

4153-126 SHIPPING CLERK(clerical) DPT:367
shipper.
 GED: 3 SVP: 4 EC: I PA: M 4 7

Arranges and prepares for dispatch of goods and keeps pertinent records:

Determines method of shipment, utilizing knowledge of shipping procedures, routes and rates. Counts and compares quantity and identification numbers of units against shipping order or invoice. Seals loaded freight cars or transport trucks prior to shipping. Prepares containers or selects prefabricated containers and places items into them, using spacers, fillers and protective padding. Prepares orders and invoices for shipping by writing on them identifying information; such as, customer's name and address, date, name and price of goods, goods not available or substituted, and shipping clerk's signature.

May weigh articles and attach postage or bill of lading. May perform duties in particular area and be designated accordingly. May remove sales-slip stubs from packages at loading dock. May be concerned with assembling and checking shipments and be designated accordingly; for example,

Shipment Assembler, Aircraft
 Shipping Checker

4153-130 CARGO-LOCATION MAN(water trans.) DPT:468
 GED: 3 SVP: 4 EC: B 5 PA: L 4 7

Determines location and dock or shed space required for ship's cargo and records cargo particulars:

Inspects bills of lading and shipping manifests, or measures dimensions of cargo and calculates stowage space required in ship's hold, on dock, or in freight shed. Records details of cargo being handled, such as kind of cargo, quantities received or delivered, and extent of damage. Tells workers to stow cargo in location allocated according to destination, and marks containers to indicate destination using chalk, paper tags, and stapling machine.

May sketch plan showing location of cargo stowed aboard ship.

4153-134 CLAIM CLERK, LOST OR DAMAGED GOODS
 (clerical) DPT:468
 GED: 3 SVP: 4 EC: I PA: S 7

Traces and expedites delayed shipments and settles claims for lost, surplus, short, or damaged goods:

Receives claims for lost, delayed or damaged goods, filed by shipper or consignee. Reviews shipping records to verify route, expected time and date of arrival and kind and amount of material shipped, to determine if consignee or shipper is in error. Communicates with consignee or shipper to explain causes of delay in shipment. Verifies records to substantiate claim of shipper and to ascertain names of carriers involved. Requests investigation or estimate of lost or damaged goods. Prorates and computes cost to each carrier according to comparative mileage. Completes required records. Disposes of refused or unclaimed shipments.

4153-138 BAGGAGEMAN(motor trans.; rail trans.; water trans.) DPT:467
 GED: 3 SVP: 3 EC: I 5 PA: H 3 4 5 6 7

Ships baggage and express from train, bus or ship terminal:

Examines tags or prepares and attaches claim checks to baggage and collects excess weight charge. Sorts baggage for loading on train, bus or ship. Ensures that customs declarations are properly filled out and attached to express items. Prepares bills to transfer baggage or express from one carrier to another. Provides rate and schedule information to customers. Traces lost or missing express or baggage.

May be concerned with handling a particular type of baggage according to transportation facility.

4153-142 ROUTE SUPPLY AND RETURN MAN(clerical) DPT:487
 GED: 3 SVP: 3 EC: I PA: L 4 7

Allocates products to driver-salesmen, checks and records unsold products:

Allocates products to driver-salesmen according to order slips and records any adjustments on route slips. Counts, checks and records unsold items returned by driver-salesmen. Examines products to determine condition, and removes damaged or unfit items.

May assist in loading or unloading delivery trucks.

4153-146 VAULTMAN(bus. serv.) DPT:567
 GED: 2 SVP: 2 EC: I PA: M 3 4 7

Routes sealed money bags, gathered by armoured-truck drivers, for delivery to establishments; such as banks, stores and industrial establishments:

Signs routing slip to acknowledge receipt of bags. Sorts bags according to delivery routes. Records data, such as origin, routing and destination of bags. Delivers bags to guard for loading into truck, and checks that guard has signed routing slip. Submits records to supervisor for review. Dispatches armoured trucks to specified areas for pick-up. Obtains cash and silver from banks to fill change orders for retail stores.

4153-150 SORTING AND ROUTING CLERK(clerical) DPT:587
 GED: 2 SVP: 2 EC: I PA: M 4 7

Prepares delivery sheet and sorts items for delivery in or outside establishment:

Copies information; such as, name and address of consignee, type of goods and number of pieces, from records onto delivery sheet. Locates goods, such as boxes, bundles, packages or lots of articles, and verifies them against delivery sheet. Sorts and groups goods according to instructions.

May place or stack items in bins, on trucks or conveyors.

4155-STOCK CLERKS AND RELATED OCCUPATIONS

This unit group includes occupations concerned with receiving, storing and distributing supplies, material and equipment; and taking inventories, estimating future requirements, keeping records, pricing and requisitioning stock.

4155-110 PRODUCTION-SUPPLY CLERK(clerical) DPT:387
 GED: 4 SVP: 6 EC: I PA: S 4 7

Compiles quantity and delivery schedules of materials and parts required for manufacturing, and prepares list of obsolete and excess items:

Examines production schedules, inventory records and bills of material to determine quantities of parts and materials required. Allocates parts and materials to specific departments. Prepares delivery schedules based on production requirements and taking into account availability, storage facilities, economical quantity purchasing and avoidance of excess inventories. Initiates requisitions to purchasing department for parts and materials, indicating specifications, departmental allotment and delivery schedule. Prepares lists of parts and materials considered obsolete or surplus and recommends their disposition.

May be concerned with a particular industry and be designated accordingly; for example,
 Production-Supply Clerk, Aircraft
 Production-Supply Clerk, Automobile

4155-114 PARTS LISTER(clerical) DPT:367
 GED: 3 SVP: 5 EC: I PA: L 4 7

Prepares list of replaceable parts used in product fabrication and repair:

Reads master bill of parts to identify each item by part number, manufacturer and description. Contacts purchasing, engineering and other departments for information on specially-designed components. Compiles list of parts for distribution. Collects and compiles data relating to product design changes or modifications. Maintains record system for list of parts and specifications.

4155-118 PROPERTIES CUSTODIAN(broadcast., motion pic. & stage) DPT:367
 GED: 3 SVP: 5 EC: B PA: M 2 3 4 7

Receives, stores and issues properties in motion picture or television studio prop room:

Counts, and sorts incoming articles, with assistance of stagehands, to

verify return of props from filming location. Stores articles in bins on floor or on shelves according to identifying information such as, style, size, or type of material. Prepares perpetual inventory of stock. May arrange and advise on setting-up of props and special effects. May purchase or rent props.

4155-122 PURCHASING CLERK(clerical) DPT:367
procurement clerk.

GED: 4 SVP: 4 EC: 1 PA: L 4 5 6 7

Compiles information and records to prepare purchase orders for procurement of material for industrial, government, or other establishments:

Verifies nomenclature and specifications of purchase requests. Searches inventory records or warehouse to determine if material on hand is in sufficient quantity. Consults catalogues to obtain prices and specifications. Writes or types purchase order and sends copies to supplier and originating department. Compiles records of items purchased or transferred between departments, prices, deliveries, and inventories. Confers with suppliers to determine reasons for late deliveries.

May compare prices, specifications, and delivery dates and award contract to bidders or place orders with salesmen or mail-order firm. May compute total cost of items purchased, using calculating machine. May classify priorities according to regulations. May verify bills from suppliers with bids or purchase orders.

4155-126 STOREMAN(clerical) DPT:367
stock checker; stock clerk.

GED: 3 SVP: 5 EC: 1 PA: M 4 7

Receives, stores, orders and issues supplies and merchandise and keeps records:

Counts and sorts incoming articles to verify receipt of items on requisitions or invoices, and examines them for conformance to specifications. Stores articles in containers or bins or on shelves, according to identifying information such as style, size or type. Fills orders or issues supplies from stock. Prepares inventories and requisitions material to fill incoming orders. Compiles reports of use of stock-handling equipment, adjustment of inventory counts and stock records, spoilage or damage to stock, location changes and refusal of shipments.

May be designated according to type of stock handled or location; for example,

Stock Clerk, Narcotics
Storeman, Ship
Stores Clerk, Machine Shop
Warehouseman

4155-130 STOCK-RECORDS CLERK(clerical) DPT:387
stock-control clerk.

GED: 3 SVP: 5 EC: 1 PA: L 4 7

Compiles stock records concerned with quantity, cost and type of material received, stored and issued in department, estimates needs and requisitions new stocks:

Verifies material received or issued against requisitions, shipping notices or invoices to ensure that there are no irregularities in order. Compiles stock control records, consumption rates and other data. Calculates stocks held in various departments, examines production, sales or other records and estimates future needs. Requisitions required stock. Makes periodic checks of records against stocks held. May be responsible for safe custody of stock. May operate typewriter or calculating machines.

4155-134 MAGAZINE KEEPER(clerical) DPT:367
powderman.

GED: 3 SVP: 4 EC: 1 6 PA: M 3 4 7

Stores and issues explosive materials; such as, blasting powder, ammonium nitrate, dynamite, fireworks, and munitions, in magazine of explosives or munitions factory, mine or construction project and keeps required records:

Records nature and quantity of materials received, shipped, or issued. Keeps charts of floor plan of magazines indicating utilization of space and type of explosives stored. Cuts fuses to specified lengths. Ties together specified numbers of fuses for issue. Enforces observance of safety regulations by persons entering magazine.

May direct workers engaged in moving and loading explosives into trucks or box cars.

4155-138 PRESCRIPTION CLERK, OPTICAL GOODS
(scient. & ind. equip., n.e.c.) DPT:367

GED: 3 SVP: 4 EC: 1 PA: L 4 7

Selects lens blanks and frames for production of eyeglasses according to prescription specifications, and keeps stock inventory at specified level:

Reads prescription to determine specifications; such as, lens power, base curve, frame style and colour. Selects lens blanks or ground lenses and frames from stock, and routes them with prescription to production section. Requisitions lens blanks and eyeglass frames and communicates with suppliers by letter and telephone to keep stock at specified level. Keeps stock of ground and bifocal lenses. Keeps inventory of stock and prepares reports of damage to stock and refusal of shipments.

4155-142 TOOL-CRIB ATTENDANT(clerical) DPT:367
tool clerk; tool-room storeman.

GED: 3 SVP: 4 EC: 1 PA: M 3 4 7

Requisitions, receives, stores, and issues hand tools, dies, and equipment, such as measuring devices and materials in industrial and other establishments:

Records stock on hand and tools loaned. Searches for lost or misplaced tools. Conducts periodic inventory and requisitions stock as required. Unpacks and verifies supplies received against invoices. Stores items in an orderly and accessible arrangement. Examines and reports damaged and worn-out equipment to superiors. Coats tools with preservative using brush or spray gun. Itemizes and prices lost tools or equipment chargeable to specific workers.

May mark tools and equipment to identify ownership, using electric pencil. May inspect safety equipment, such as belts and ropes, and recommend replacement as required. May be designated according to item stored; for example,

Die-Storage Man

4155-146 INVENTORY CLERK(clerical) DPT:387
physical-inventory clerk.

GED: 3 SVP: 4 EC: 1 PA: L 4 7

Compiles records of amount, kind and value of merchandise, material, equipment or stock on hand in establishment or department of establishment:

Counts stock, material, merchandise or equipment and posts totals to inventory records. Compares inventories taken by other workers with office records, or computes figures from sales, purchase, shipping, production, stock or equipment records to obtain current theoretical inventory. Verifies clerical computations against physical count of stock and adjusts errors in computation or count, or investigates and reports reasons for discrepancies. Computes inventory balance, price and costs. Prepares reports of inventory balance, prices and shortages. Assists in preparing statistical reports.

May route merchandise from one area to another. May operate adding and calculating machines. May be designated according to type of inventory; for example,

Equipment-Inventory Clerk
Inventory Clerk, Perpetual

4155-150 SALVAGE CLERK(clerical) DPT:387
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Receives and sorts unserviceable equipment and supplies for sale, disposal or reclamation:

Sorts and stores items according to type, size or condition. Places sorted items into containers for movement to storage, disposal, re-assembly or reclamation areas. Prepares records indicating number of items rejected and the reasons for rejection.

May dismantle items to recover salvageable parts, using hand tools. May tag items, indicating specifications and condition.

4155-154 LABORATORY CLERK(clerical) DPT:584
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Keeps records of chemical and other supplies in laboratory:
Keeps records of chemicals, apparatus and samples; such as, coal, oil, sugar, beet pulp, liquor sugar crystals and molasses received for testing in control laboratory. Weighs, prepares and records shipment of chemical supplies furnished by laboratory. Cleans glassware and other laboratory apparatus and salvages sample bottles or containers for reuse.
May keep production records for quality control purposes. May calculate production data according to formulas, using calculating machine. May type production data onto production records.

4155-158 KITCHEN-STOCK CLERK(clerical) DPT:587
GED: 3 SVP: 4 EC: 1 PA: M 3 4 7

Verifies quantity and quality of foodstuffs received, and issued to kitchen from storeroom:
Weighs, observes and measures foodstuffs to verify quantity and quality. Oversees distribution of all foodstuffs. Keeps inventory of stock on hand in kitchen.
May store usable foods returned from dining-rooms.

4155-162 CHECKER, INVOICE AND ORDER(clerical) DPT:687
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Verifies quantity, quality, condition, type, value and other related factors of articles purchased, sold or produced, against invoices, orders, records and reports:
Checks incoming and outgoing articles against invoices and orders by examining them to ensure that they are in good condition and according to specifications. Sorts items in predetermined sequence groups. Ensures that all goods ordered are received or dispatched.
May be designated according to area of work; for example, Warehouse Checker

4155-166 MAIL-ORDER FILLER(ret. trade; whole. trade) DPT:687
order filler.
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Fills customers' orders and marks price of merchandise on order forms:
Reads order to ascertain catalogue number, size, colour, and quantity of merchandise requested. Obtains merchandise from bins or shelves. Places merchandise on conveyance for transfer to wrapping area. Pushes hand truck to convey merchandise between work areas. Restocks shelves and bins with commodities.

4155-170 TOOTH CLERK(medical) DPT:687
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Selects false teeth used to make dental plates according to order specifications:
Selects teeth specified according to colour, shape of jaw and physical description of patient; such as, sex, facial characteristics, age, and physical type. Matches teeth with those of mould made by dentist. Places order in tray for shipping room.

4155-174 TRANSFORMER-STOCKROOM MAN(elec. power) DPT:687
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Stores, issues, drains and fills with oil, transformers used in electric-power system:
Moves new transformers to storage space, using hoist. Opens valve using hand tools to drain oil from used transformers. Depresses button to start motor-driven pump which forces used oil through filtering machine and into storage tank. Selects type and size of transformer to fill requisition. Fills oil container of transformers to be issued with new or reclaimed oil. Loads transformers onto truck for delivery, using electric hoist. Keeps record of stock available.
May keep work area clean, using rags and floor broom.

4155-178 LINEN-ROOM ATTENDANT(clerical) DPT:487
linen-supply clerk.
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Stores, issues, and inventories linen for beds, tables and uniforms, in hotels, hospitals, laundries and other establishments:
Examines laundered items to ensure cleanliness and serviceability. Stores laundered linen on shelves, after verifying numbers and types of items. Counts, and records linen to fill requisitions. Conducts monthly and yearly inventories to identify items for replacement.
May sort, count and record number of items of soiled linen, and place linen in containers for transmittal to laundry. May stamp linen with identification mark. May mend torn articles by hand or machine or send them for repair.

4155-182 CAR SUPPLIER(rail trans.) DPT:687
GED: 2 SVP: 3 EC: B PA: M 3 4 7

Stocks railway passenger coaches and dining cars with supplies; such as, non-perishable food, soap, crockery, linens, paper cups and towels:
Obtains supplies from storeroom, using stock list as guide. Requisitions additional supplies to replenish stock. Keeps record of materials supplied to cars. Drives gasoline-powered tractor to deliver supplies to each car. Loads supplies onto cars, placing them as designated.

4155-199 OTHER STOCK CLERKS AND RELATED OCCUPATIONS

This group includes stock clerks, not elsewhere classified; for example, those who receive, store and issue moulds used in casting, and print rollers used for producing wallpaper patterns; assemble, clean and pack hospital supplies; and supply stocks of parts for appliances. Typical examples of occupational titles covered by this residual group definition are:
Medical-Supply Attendant(medical)
Mould Supplier, Rubber(clerical)
Parts Supplier(clerical)
Print-Rollerkeeper, Wallpaper(clerical)

4157-WEIGHERS

This unit group includes occupations primarily concerned with weighing materials, products, railway cars and other vehicles; and keeping relevant records.

4157-110 HIGHWAY-SCALE OPERATOR(gov. serv.) DPT:364
weighing-station operator.
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Weights and inspects motor trucks at highway weighing station to determine compliance with statutory weight limits and other provisions of provincial law:
Moves levers and weights on scale-bar and reads indicators to determine gross weight of vehicle. Subtracts tare from gross weight to obtain net weight of vehicle load. Inspects vehicles for axle weight distribution, legality of cargo and display of valid licences and permits, according to published regulations and standards. Observes and records gross and axle weight registered by automatic scales built into road siding. Compiles and submits reports describing specified violations of Motor Vehicle Traffic Laws. Notifies driver of defects in his vehicle. Orders driver to unload excess cargo to meet weight limitation, or to redistribute axle weight of cargo more equally in truck. Reports to police serious violations and failure to stop for weighing, or intercepts offending vehicle, using departmental car. Attends provincial court hearings to offer evidence for prosecution authorities.

4157-114 WEIGHER, TRUCK(clerical) DPT:464
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Weighs truckloads of material; such as, gravel, cinder blocks and fill to determine weight of load contents:
Moves levers and weights on scale-bar of platform scale, and reads indicators to determine gross weight of vehicle and load. Subtracts weight of vehicle from gross weight to obtain net weight of vehicle load. Records weight and nature of contents to compute payments to driver or owner. Advises driver concerning overloading and uneven distribution of load.

4157-118 WEIGHER, DRUG AND TOILET GOODS(clerical) DPT:484
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Weighs ingredients or packaged products for use in manufacturing drug and toilet goods, using fine scales and analytical and torsion balances:

Weighs empty container or scale pan and adjusts scales and balances to compensate for tare. Examines ingredients to detect impurities, lumps, discoloration or evidence of spoilage. Scoops or dumps ingredients into container or scale pan until specified weight is attained. Records items weighed, and weight or volume discrepancies. Pours liquids into graduates to compare volume with formula specifications.

4157-122 WEIGHER, RAILWAY CAR(rail trans.) DPT:464
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Weighs freight cars containing incoming or outgoing products electronically or on beam scale, by one of the following methods:

1. Pushes button on console and records scale readings of gross weight of specified car indicated on display panel, as cars roll down the hump over electronic scale. Subtracts tare to ascertain net weight of products in car. 2. Signals engineman to move cars on and off scale. Moves levers and weights on scale bar and reads gross weight from indicators. Records scale readings of gross weight of loaded car, and subtracts tare to ascertain net weight of goods in car.

May weigh newly constructed freight, tank and hopper cars after assembly, to determine tare weight for registration on car.

4157-126 WEIGHER-COUNTER(clerical) DPT:484
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Computes number of small parts such as typewriter parts and semiconductor pellets in container, using balance scale and calculating machine for stock or production records:

Sets container of parts on platform of ratio-balance scale. Slides balance weight on beam to correspond with weight stamped on container to compensate for tare. Removes quantity of parts from container, and places them in scale pans used to counterbalance and weigh parts in container. Adds or removes parts to bring scale indicator to zero position. Counts parts in each pan and multiplies them by thousands, hundreds and tens to determine number of parts in container. Records number of parts in container on stock or production records.

May transport weighed containers to designated areas, using handtruck.

4157-130 WEIGHER, PRODUCTION(clerical) DPT:584
GED: 2 SVP: 3 EC: 1 PA: L 5 6 7

Weighs products or quantities of material for production processes according to specifications, using balance, platform or floor scales, by performing any combination of the following duties:

Selects materials from storage area or receives them on a conveyance. Weighs products or materials, using balance, platform or floor scales to establish or confirm weight. Dumps, feeds or otherwise moves materials for next stage of production. Weighs ladles and other containers full of raw materials such as scrap and metal, limestone or iron ore. Records factors such as weight, grade and price of material. Verifies accuracy of scales and makes required adjustments.

4157-134 WEIGHER(clerical) DPT:484
weighing clerk.
GED: 2 SVP: 2 EC: B PA: M 4 7

Weighs goods received, issued, produced or shipped and maintains relevant clerical records:

Places or directs placing of goods on weighing machine. Reads indicator to determine gross weight, subtracts weight of container to obtain net weight, and records it on ticket or product. Records details of goods weighed and submits returns and reports as required.

May examine, inspect and classify goods weighed. May be designated according to materials weighed; for example,
Carcass Weigher
Garment Weigher
Tobacco Weigher

4157-138 TARE MAN(sugar) DPT:584
GED: 2 SVP: 2 EC: I 6 PA: M 3 4

Weighs samples of sugar beets to determine amount of tare (waste) for computation of payment to growers:

Samples beets from each delivery and tags sample with grower's identification code. Weighs sample and records weight. Washes dirt from beets, using water and pan and removes tops, using knife. Reweighs beets and records weight on grower's tag. Sends sample to laboratory for analysis.

4157-142 WEIGHER, LIVESTOCK(clerical) DPT:584
GED: 2 SVP: 2 EC: I 7 PA: L 4

Weighs livestock in stockyard by lots, or individually:

Records name of livestock owner and commission agency on scale ticket. Moves levers, dials, and weights on scale bar, reads indicators and records weight on scale ticket by inserting ticket in scale and moving lever to punch weight. Records number of head of livestock, identification marks (brands), and price on ticket.

May call weights to clerk for recording in ledger. May assist in driving livestock in and out of weighing pen. May segregate livestock according to weight, age, and sex, for sale by lots.

4159-MATERIAL RECORDING, SCHEDULING AND DISTRIBUTING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with examining orders for goods and services, preparing schedules, receiving, counting, sorting, shipping and distributing goods and accounting for stock. Activities include: appraising, classifying, and reviewing warranty claims for faulty equipment; estimating requirements; recording equipment and labour used and work progress; identifying and classifying materials; and attaching price tickets to merchandise.

4159-110 ESTIMATOR, JEWELLERY(jewellery & precious metal prod.) DPT:467
GED: 4 SVP: 6 EC: I PA: S 4 5 7

Estimates cost and discusses production requirements for custom-made jewellery production with clients and staff:

Estimates amount of material and labour required to produce or alter particular items or types of jewellery, utilizing knowledge gained from experience of designs, orders, and current prices and demand. Keeps record of estimates. Discusses alternate possibilities with clients concerning design, cost, or other details to assure customer satisfaction.

4159-114 TELEPHONE-EQUIPMENT APPRAISER(telecom.) DPT:384
GED: 4 SVP: 4 EC: I PA: L 4 7

Appraises and classifies returned telephone equipment to determine disposition and price:

Dismantles and examines returned equipment; such as, telephone hand sets, private branch exchange switchboards and teletype

machines to identify and classify them according to price lists and catalogues. Determines condition and adaptability for current use. Records classification, salvage value, price and disposition. Writes identifying information on tags regarding disposition of components, and attaches tags to apparatus. Evaluates claims for material incorrectly supplied or damaged in transit, and writes claim approval or rejection slips.

4159-118 WARRANTY CLERK(clerical) DPT:367
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Reviews claims and examines parts received from dealers or individuals, requesting reimbursement for defective items under warranty:

Reads claim forms to ascertain that adequate information is given, and that amount of labour claimed for changing or repairing parts is reasonable. Completes reports, telephones dealer for additional information or returns forms to dealer for completion. Prepares reports to summarize number and types of defects as shown on claims. Inspects parts to determine whether or not claim should be allowed. Prepares reimbursement documents for payment of claims and submits them for approval.

4159-122 TANK CALIBRATOR(metal stamp., press. & coat.) DPT:584
calibration man.
GED: 3 SVP: 4 EC: B 4 PA: M 2 3 4 7

Calibrates tanks of varying sizes and shapes to measure incremental and total capacities for certification, using liquid calibration methods: Inserts feed hose from storage container into tank and turns valves to admit measured quantities of liquid from container through meter of known accuracy into tank being calibrated. Marks level of fluid attained in tank on tank scale or dipstick. Repeats process to obtain measurements at specified levels. Calibrates small tanks by admitting liquid to tank to be calibrated, through certified flow-meter and observing level of liquid through sight glass. Records calibration data, such as fluids used, temperatures, serial numbers, correction factors and capacities.

4159-126 ROAD CLERK(rail trans.) DPT:384
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Records material and machinery used by section crews, geographical location of work, personnel and other information:

Records nomenclature and quantity of material and machinery used to repair and maintain railroad tracks and right-of-way within division of railroad system. Records geographical location, type of repairs and time required to complete work. Types requisitions for additional materials. Keeps time and personnel records.

May consolidate reports submitted by other road clerks and be designated accordingly,
Roadmaster Clerk

4159-134 WATER-METER READER(water works) DPT:584
GED: 3 SVP: 3 EC: B PA: L 4 7

Reads water consumption meters and measures amount drawn from reservoir through sluice gates in customer's power plant:

Reads water meters and records number of gallons used by customer. Examines visually meters and connections for defects or unauthorized connections. Makes minor adjustments to meter to correct inaccuracies, using hand tools. Reads indicator on sluice gate to determine width of gate and verify meter readings. Measures distance from watermark on retaining wall outside gate to water level, using ruler, and records distance and time of measurement. Submits reports showing meter readings, gallons used, and irregularities found.

4159-138 SAMPLE-CONTROL CLERK(clerical) DPT:587
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Stores test samples of food and drug materials and records results for product study program:

Files and tags containers of raw materials used in pharmaceutical compounding, and samples of milk, cream, cheese and preserved meats, or other products to be tested in health standards laboratory. Stores samples of finished products in refrigerators, in labelled containers and records identifying data in alphabetical index listing.

Keeps tickler file for withdrawal of samples for testing. Withdraws samples on dates indicated or when requested, and takes them to laboratory for testing. Charts experimental results data, such as appearance, butter-fat content and bacteria count. Files product study control charts.

4159-142 WRAPPER-COUNTER(tobacco) DPT:587
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Counts and records number of tobacco-wrapper leaves produced by other workers tending wrapping machines:

Counts and ties specified number of tobacco-wrapper leaves, writes number on ticket and attaches ticket to bundle. Initials number of wrapper-leaves shown on diary sheets which are used to calculate employees' pay. Sends report to pay office at end of shift, showing number of machine, name of operator, and number of wrapper-leaves produced.

4159-146 DRESS CHECKER(ret. trade) DPT:567
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Records number of dresses, coats and suits carried in and out of dressing rooms by customers who wish to try them on before buying:

Assigns dressing room to customer and enters number of room on record sheet. Permits customer to take designated number of dresses into room. Records number of dresses carried in by customer. Receives unwanted garments from customer and returns them to sales personnel.

4159-150 TICKET CHECKER(tobacco) DPT:567
GED: 2 SVP: 2 EC: 1 7 PA: L 4 7

Checks and verifies grade of tobacco to ensure that blending will conform to formula:

Removes warehouse ticket from opened hogshead and compares grade, recorded with processing grade, to prevent processing of mixed grades, or to blend grades according to formula. Removes and tags tobacco of questionable grade from processing line. Files tickets according to grade, and indicates on each ticket, purpose for which tobacco is to be used. Removes processor's grade ticket, and files with warehouse ticket for production records. Enters ticket number, grade, code number, date and time in office control log.

4159-154 PRICE MARKER(ret. trade; whole. trade) DPT:587
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Prints and attaches price tickets to articles of merchandise, using one of the following methods:

1. Marks selling price by hand on articles or price tickets, and ties, glues or staples price ticket to each article. 2. Inserts type in printing frame or turns knob to set type. Presses button or turns handle to print selling price and identifying information on rolls of tickets. Presses lever or plunger of mechanism that pastes, ties, or staples ticket to article.

May record number and type of articles marked, and pack them in boxes. May pile merchandise on dolly, and fill shelves with prepared merchandise. May be concerned with marking particular articles and be designated accordingly,

Garment-Price Marker

4159-158 SORTER, UPHOLSTERY PARTS(furn.) DPT:587
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Sorts, counts and bundles upholstery parts or covers in furniture sewing department:

Collects parts and carries them to work table. Sorts, counts and stacks parts according to colour, quantity, size, material and part- number specifications on work ticket. Staples identification tag to first part on stack. Records colour, quantity, material and part number from work ticket onto production report form. Ties stacked parts into bundles, using string or scrap fabric strip. Moves bundles to storage area on pallets or by hand and places in bins or on shelves, according to part number.

4159-162 SORTER, DEFECTIVE GARMENTS(garment & fabric) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Sorts damaged or rejected garments, and delivers garments to sewing or cutting department for repairs:
Transports rejected garments to work table, using hand cart. Sorts and

stacks garments on hand cart according to information on repair tag. Delivers damaged garments to sewer or cutter for repair. May sort and match garments or parts according to size and pattern. May mark and cut out piece to replace damaged part of garment, using hand shears.

416-LIBRARY, FILE, CORRESPONDENCE CLERKS AND RELATED OCCUPATIONS

This minor group includes clerical occupations concerned with classifying and filing publications, correspondence and other related data in libraries and offices; composing correspondence and related material to obtain or provide information; and making records. These occupations are classified in the following unit groups:

4160 Supervisors: Library, File, Correspondence
Clerks and Related Occupations

4161 Library and File Clerks

4169 Library, File, Correspondence Clerks and
Related Occupations, n.e.c.

4160-SUPERVISORS: LIBRARY, FILE, CORRESPONDENCE CLERKS AND RELATED OCCUPATIONS

This unit group includes occupations, as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of workers engaged in issuing and lending books; classifying and filing publications, correspondence and other material in offices and libraries; and composing correspondence reports and similar data to obtain or provide information.

4160-110 SUPERVISOR, LIBRARY AND FILE
CLERKS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in recording, classifying and filing publications, correspondence and other related data in libraries and offices, (Unit Group 4161):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers in a particular activity and be designated accordingly; for example,
Supervisor, File Clerks
Supervisor, Library Clerks

4160-199 OTHER SUPERVISORS, LIBRARY, FILE AND
CORRESPONDENCE CLERKS

This group includes supervisors of library, file and correspondence clerks and related workers, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in classifying and comparing fingerprints, and preparing correspondence and reports relating to customs laws, and correspondence in general. Typical examples of occupational titles covered by this residual group definition are:

Supervisor, Correspondence Clerks(clerical)
Supervisor, Customs Clerks(gov. serv.)
Supervisor, Fingerprint Classifiers(gov. serv.)

examining, sorting and filing correspondence and other data. Library Technical Assistants are in Unit Group 2353, TECHNICIANS IN LIBRARY, MUSEUM AND ARCHIVAL SCIENCES.

4161-110 MEDICAL-RECORD LIBRARIAN(medical) DPT:367

hospital-record clerk.

GED: 4 SVP: 5 EC: 1 PA: L 4 5 6 7

Compiles and maintains medical records and statistics of hospital and clinic patients:

Reviews clinical records for completeness and contacts medical personnel to obtain missing data. Codes, indexes and files records of diagnoses, diseases and treatments. Compiles statistics; such as, reports on admissions, births, deaths, transfers and discharges. Releases medical information to staff and authorized government agencies, insurance companies, physicians, hospitals, and medical information and research centres.

May brief and transcribe records. May testify in court to authenticate medical records.

4161-114 BRAND RECORDER(gov. serv.) DPT:367
GED: 3 SVP: 5 EC: 1 PA: S 5 6 7

Approves and records brand marks used to identify animals, such as horses, cattle or sheep, and produce or other commodities, to facilitate identification:

Receives application for new brand, discusses brand with applicant and verifies design against official brand records to prevent duplication. Records assignment, reassignment or cancellation of brand to appropriate organization or individual. Receives brand recording fee and submits brand certificate for approval. Keeps files or reports compiled by field inspectors to prevent fraud or unauthorized use of brands. Compiles statistics for publication of brand book and monthly supplementary lists.

4161-LIBRARY AND FILE CLERKS

This unit group includes clerical occupations concerned with recording, classifying and filing publications, correspondence and other material in offices and libraries. Activities include: lending or issuing books, films and recordings; searching for and compiling information; issuing files; updating library catalogues, file indexes and records, and

4161-118 LIBRARY CLERK(educ.) DPT:367
library attendant.

GED: 4 SVP: 4 EC: 1 PA: L 3 4 5 6 7

Compiles records, sorts and shelves books, and issues and receives library materials; such as, books, films, and phonograph records, performing any combination of the following duties:

Issues books to patrons, writes identification data and due-in-date on

cards, or uses photographic record-keeping device. Inspects returned books for damage, verifies due-date, and computes and receives overdue fines. Reviews records to compile list of overdue books and sends overdue notices to borrowers. Sorts books, publications, and other items; such as, phonograph records and films, according to classification code. Returns them to shelves, files, or other designated storage areas. Examines material on shelves to verify accuracy of placement. Locates books and publications for patrons. Issues borrower's identification card according to established procedures. Files cards in catalogue drawers according to system. Answers telephone inquiries and queries from patrons in library, referring persons requiring professional assistance to 2351-114 LIBRARIAN (educ.). Types material cards or issue cards and duty schedules. Makes minor repairs to books, using mending tape, paste and brush.

May be designated according to type of library or department, or task performed; for example,

Bookmobile Clerk

Branch-Library Clerk

Library Clerk, Art Department

Library Clerk, Book Return

Library Clerk, Braille and Talking Books

4161-122 FILE AND CLASSIFICATION CLERK(clerical)

DPT:387

GED: 3 SVP: 5 EC: I PA: L 3 4 7

Classifies, files and records papers, and searches documents and other data to supply written information from files:

Classifies material and assigns code when classification is not readily discernible. Labels jackets or other file containers by hand, or using typewriter. Disposes of obsolete files according to established policies. Keeps diary of material to be withdrawn, distributed, or sent to document destruction centre. Records serially-numbered documents; such as, important agreements and sensitive documents of limited circulation to maintain custody and control. Reviews files to insert additional data, or to locate and supply written and oral information.

4161-126 TAPE LIBRARIAN(clerical)

DPT:387

computer-tape librarian.

GED: 4 SVP: 4 EC: I PA: L 4 7

Classifies, catalogues, and maintains library of reels of magnetic or punched paper tape, or decks of punch cards used for electronic data-processing:

Classifies and catalogues material according to content, purpose of program, routine, and date on which generated. Assigns code conforming to standardized system. Prepares index cards for file references. Stores materials and records according to classification and catalogue number. Issues materials and keeps charge-out records. Inspects returned tapes or cards and notifies supervisor if worn or damaged.

May keep files of program developmental records and operating instructions.

4161-130 CUT MAN(clerical)

DPT:387

GED: 3 SVP: 4 EC: I PA: L 2 4 7

Files advertising and layout cuts (patterns), mats, electrotypes, or films and offset plates used in printing:

Tags or marks cuts, mats or plates with identifying information and places them in filing cabinets, cases, or on shelves. Prepares card index for each item filed. Removes requested items from file and records date of removal on file card.

May wash plates to remove dirt, ink and oxides, and apply gum solution to plate surface to protect plate during storage. May hang or retrieve films or offset printing plates from racks.

4161-134 FILE CLERK(clerical)

DPT:387

GED: 3 SVP: 3 EC: I PA: L 3 4 7

Files papers, documents and other data according to subject matter or other filing system:

Sorts cards, correspondence, invoices, receipts, photographs and other material according to filing system. Places material in specified filing cabinets, drawers or cases. Locates and removes material from files when requested. Keeps records of material removed. Stamps material received, traces missing file folders and writes or types indexing information on folders. Enters data on records.

May be designated according to subject matter filed; for example,

Change-of-Address Clerk

File Clerk, Correspondence

File Clerk, Drawings

4161-138 LIBRARY CLERK, FILMS AND

RECORDINGS

(clerical)

DPT:387

film-vault clerk.

GED: 3 SVP: 3 EC: I PA: L 4

Stores, issues and lends motion-picture films, slides or recordings used for training, entertainment or educational purposes:

Compiles and keeps catalogue of films. Stores, issues and lends films, slides, scripts and records or other material used for film, slide or broadcast shows. Examines returned material for completeness or defects and prepares report.

May prepare monthly statistics on number of films distributed and attendance at film showings. May store films or recordings for radio and television broadcasting and be designated accordingly; for example,

Library Clerk, Films

Library Clerk, Recordings

**4169-LIBRARY, FILE, CORRESPONDENCE CLERKS
AND RELATED OCCUPATIONS, N.E.C.**

This unit group includes occupations, not elsewhere classified, concerned with preparing and composing correspondence; making records; examining documents to obtain, verify and record information; and recording, classifying and filing correspondence, publications and other data in libraries and offices; and doing related work.

4169-110 FINGERPRINT CLASSIFIER(gov. serv.)

DPT:267

fingerprint examiner.

GED: 4 SVP: 7 EC: I 7 PA: S 4 5 7

Analyzes, classifies and compares fingerprints for positive identification of persons:

Analyzes and classifies each fingerprint impression according to specified grouping, using magnifying glass. Searches master file and compares fingerprints being studied with others, using microscope or magnifying glass, to determine if suspect has criminal record or is wanted for other crimes, or to identify missing or deceased persons and persons using aliases. Fingerprints police recruits, private investigators, and visa applicants for record purposes. Records fingerprints received by name, date and fingerprint number. Examines fingerprint evidence left at scene of crime, classifies prints and endeavours to identify person. Transfers latent fingerprints from objects, such as weapons or drinking glasses to record cards, using standard techniques. Prepares illustrative charts, sketches and photographic enlargements and instructs police in the use of exhibits in court.

May appear in court to explain fingerprint identification. May develop, print and enlarge negatives.

4169-114 CREDITS-ASSESSMENT CLERK(educ.) DPT:368
assessor.

GED: 5 SVP: 6 EC: I PA: S 5 6 7

Reviews educational records and evaluates transfer credits to ascertain student's eligibility for admission to specified college or university: Writes replies to inquiries from prospective students concerning admission and transfer of credits. Examines and compiles information obtained from official transcripts, correspondence, telephone and personal interview to establish file on academic status of transfer students, and to correlate courses already taken with those offered at school to which student seeks admission. Keeps records on non-degree or special students. Prepares information guides and other aids to compile reports concerning admission standards and accreditation.

4169-118 CUSTOMS CLERK(gov. serv.) DPT:367
GED: 4 SVP: 6 EC: I PA: L 4 5 6 7

Prepares correspondence and reports, completes forms and disseminates information relating to import or export of goods, according to applicable customs laws and regulations of government departments:

Examines entry, transportation, and other documents to ensure compliance with specified regulations. Calculates and enters duty charges and excise taxes where applicable. Answers inquiries from shipping representatives and the public. Makes preliminary, routine decisions and issues documents in compliance with specified laws.

May perform clerical tasks; such as, typing, filing and posting. May perform special duties and be designated accordingly, Customs-Excise Clerk

4169-122 CORRESPONDENCE CLERK(clerical) DPT:284
correspondence-review clerk.
GED: 4 SVP: 4 EC: I PA: S 4 7

Composes letters in reply to correspondence concerning items; such as, requests for information and merchandise, damage claims, credit information, delinquent accounts, incorrect billing and unsatisfactory service:

Reads incoming correspondence and gathers data to formulate reply or routes correspondence to individual or department concerned for investigation or reply. Types letters, dictates replies or selects and completes form letters.

May keep files of correspondence sent, received or requiring further action.

4169-126 CIRCULATION CLERK, NEWSPAPER(print. & pub.) DPT:368
GED: 3 SVP: 5 EC: I PA: S 4 7

Compiles records concerned with city or mail-order distribution of newspapers to subscribers, carriers or dealers, and adjusts complaints: Examines delivery tickets and records number of newspapers delivered to each area of circulation. Corrects errors in circulation records. Receives telephoned and written complaints from subscribers, and requests distributors to take corrective action.

4169-130 READER(bus. serv.; clerical) DPT:387
GED: 3 SVP: 4 EC: I PA: S 4 7

Reads newspapers, magazines, press reports and other periodicals for articles of value and interest:

Clips articles of interest using scissors, or marks items to be clipped, using coloured pencils and an established code system. Circulates articles to interested persons or posts them on bulletin board.

May file clipped articles. May prepare cross-indexes of important articles for future reference.

4169-134 METER-RECORDS CLERK(elec. power; utilities, n.e.c.) DPT:564
GED: 3 SVP: 4 EC: I PA: S 4 7

Keeps records concerning servicing, inspecting, and installing of electric or gas meters:

Enters on history cards, data, such as; name and address of customer, size and type of meter, and dates of servicing, inspecting, installing or disconnecting meters. Supplies meter repair and maintenance workers, accounting departments and customers with information from files as

requested. Receives orders for meter servicing, and prepares and types work orders. Receives cash for reconnection services. May match permits with appropriate work orders and verify completeness of information. May make periodic reports of meters set, removed or changed.

4169-138 CHECKER, RECORDED DATA(clerical) DPT:687
GED: 3 SVP: 4 EC: I PA: S 4 7

Reviews recorded data to ensure accuracy:

Compares information, lists or figures on one record against the same data on other records. Corrects or makes note of omissions, errors or inconsistencies found.

May check specific types of recorded data and be designated accordingly; for example, Billing Checker Price Checker Typing Checker

4169-142 SALES-PROMOTION CLERK(clerical) DPT:567
GED: 3 SVP: 2 EC: I PA: S 4 5 6 7

Reviews records of accounts to determine which customers should be sent follow-up or advertising literature:

Telephones customers or types form letters to solicit new business. Checks inactive accounts and investigates reasons for inactivity. Keeps records of customers' purchases, entering type and amount of sale on card index or other form.

4169-146 SORTER(clerical) DPT:687
GED 2 SVP: 3 EC: I PA: S 4 7

Sorts printed material into specified sequence or groups for filing, mailing, copying data and preparing reports:

Sorts items such as forms, cheques, receipts, bills, sales tickets, and correspondence according to addresses, codes, quantity, class or other prescribed methods.

May keep record of number of items filed, mailed or sorted. May be designated according to items sorted; for example, Bill Sorter Sales-Slip Sorter Ticket Sorter

4169-150 FINGERPRINT CLERK(gov. serv.) DPT:567
GED: 2 SVP: 2 EC: I PA: L 4 5 7

Transfers fingerprints of individuals onto cards or forms:

Presses fingers of individual on ink pad or glass plate, and rolls them in specified spaces on card. Writes or types identifying information; such as, name, address and occupation on card. Files fingerprint cards or forms.

4169-154 SAMPLEMAN, PAPER(pulp & paper) DPT:587
GED: 2 SVP: 2 EC: I PA: L 4 7

Prepares samples of paper and paper products for filing and mailing, by performing any combination of the following duties:

Collects samples from paper, coating, and cutting machines. Cuts samples to specified dimensions to facilitate filing and mailing, using paper cutter. Marks samples with identifying information; such as, customer's order number, batch or reel number, grade and colour of paper. Files samples for use in tracing technical defects. Mails samples to customers and sales personnel, or distributes them to plant officials for examination. May collect and send samples of pulp and paper to laboratory for testing and compare test reports with specifications.

4169-158 PAGE, LIBRARY(educ.) DPT:687
library-shelving clerk; runner; stack clerk.
GED: 2 SVP: 2 EC: I PA: L 2 3 4 7

Fetches library materials and returns them to shelving area:

Trucks or carries books, periodicals, audio-visual and other library materials between issue desk and shelving area. Stacks items on shelves according to classification and code number. Verifies correct stacking sequence by reading code numbers. Performs other clerical duties; such as, clipping premarked items from publications.

4169-162 TOLL-RATING CLERK(telecom.) DPT:687
telephone-toll-timing clerk.
 GED: 2 SVP: 2 EC: 1 PA: S 4 7

Classifies telephone-toll tickets to compute charges for long- distance calls requiring assistance of operator:
 Sorts toll tickets according to mileage zones, distance between telephone stations, and area where call is to be billed. Reads date-time stamp on toll-ticket to determine length of call. Assembles minute-lead cards, traffic-transmittal cards and toll tickets into modules for computation of charges.

**4169-199 OTHER LIBRARY, FILE AND
 CORRESPONDENCE CLERKS, AND RELATED
 OCCUPATIONS**

This group includes other library, file and correspondence clerks, not elsewhere classified, for example those who prepare and compose correspondence, make records, examine books, newspapers and documents to obtain, verify and record information, and to classify and file correspondence, publications and other data. Typical examples of occupational titles covered by this residual group definition are:
 Card Filer(clerical)
 Morgue Keeper(print. & pub.)

417-RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS

This minor group includes occupations concerned with receiving clients and customers, making appointments, giving information in person and by telephone, distributing mail, delivering messages and operating telephone switchboards. These occupations are classified in the following unit groups:

**4170 Supervisors: Reception, Information, Mail
 and Message Distribution Occupations**

4171 Receptionists and Information Clerks

4172 Mail Carriers

4173 Mail and Postal Clerks

4175 Telephone Operators

4177 Messengers

**4179 Reception, Information, Mail and Message
 Distribution Occupations, n.e.c.**

4170-SUPERVISORS: RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of workers engaged in receiving clients and customers, making appointments, giving information in person and by telephone, distributing mail, delivering messages and operating telephone switchboards.

**4170-110 SUPERVISOR, MAIL AND POSTAL
 CLERKS**(clerical) DPT:138

Supervises and co-ordinates activities of workers, in government and private industry, engaged in sorting, processing and bagging mail, computing postal costs, recording daily transactions, selling postage stamps and money orders, and registering and insuring mail, (Unit Group 4173):
 Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4170-114 SUPERVISOR, MAIL CARRIERS(gov. serv.) DPT:138
supervisor, letter carriers.

Supervises and co-ordinates activities of government workers engaged in arranging and delivering mail according to specified route, recording delivery of registered mail and collecting money for cash-on-delivery packages, (Unit Group 4172):
 Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4170-118 SUPERVISOR, MESSENGERS(clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in running errands; sorting, delivering and collecting letters, packages and messages; distributing office supplies and performing similar routine duties, (Unit Group 4177):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

**4170-122 SUPERVISOR, RECEPTIONISTS AND
 INFORMATION CLERKS** (clerical) DPT:138

Supervises and co-ordinates activities of workers engaged in receiving clients and customers in establishments, making appointments, providing information and answering inquiries by telephone or in person, (Unit Group 4171):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,
 Supervisor, Hospital-Admitting Clerks
 Supervisor, Price-Information Clerks

**4170-126 SUPERVISOR, TELEPHONE
 OPERATORS**(telecom.) DPT:138
telephone operator, chief.

Supervises and co-ordinates activities of workers engaged in operating public and private telephone switchboards to relay incoming, inter-office and outgoing calls in computing toll charges, supplying information, and keeping related records, (Unit Group 4175):
 Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4170-130 SUPERVISOR, POSTAL STATION(gov. serv.)
DPT:138
GED: 4 SVP: 7 EC: 1 PA: S 5 6 7

Supervises and co-ordinates activities of workers engaged in providing postal services in a postal station area:
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Establishes work schedule for wicket and letter-carrier staff. Oversees postal services of sub-post offices and reports on need for opening, transferring and closing sub-post offices. Safeguards and accounts for postal values and post office revenues. Recommends changes in letter-carrier walk routes.

4171-RECEPTIONISTS AND INFORMATION CLERKS

This unit group includes occupations concerned with receiving clients, customers and others in offices and establishments, making appointments, providing information and answering enquiries by telephone or in person.

4171-110 HOSPITAL-ADMITTING CLERK(medical)
DPT:364
GED: 3 SVP: 5 EC: 1 PA: S 4 5 6 7

Interviews incoming patient or representative, records information required for admission, and assigns patient to room:
Records patient's name, address, age, religion, persons to notify in case of emergency, or insurance company responsible for payment of bill, and ascertains information regarding illness or accident. Gives brochures to patient or representative explaining hospital regulations, such as visiting hours, payment of accounts and schedule of charges. Types admitting record and routes it to designated department. Obtains signed statement from patient to give consent for treatment. Schedules appointments for examinations in hospital clinic according to nature of illness. Answers telephone to give out general information concerning patient care.
May receive payment on accounts. May work in emergency section of hospital and be designated accordingly,
Emergency-Admitting Clerk

4171-114 PRICE-INFORMATION CLERK(clerical) DPT:368
GED: 3 SVP: 5 EC: 1 PA: S 4 5 6 7

Provides prices and data regarding items for sale:
Furnishes prices on items of merchandise by telephone or mail, requested by customers and others. Marks price of item on order sheet or other purchase form. Compiles data from various departments or sources and prepares quotation for customer. Lists selling prices to be charged for various items sent to distributing agents or stores. Performs general office duties, such as typing and filing.

4171-118 RECEPTIONIST(clerical) DPT:367
appointment clerk; reception clerk.
GED: 3 SVP: 3 EC: 1 PA: S 4 5 6 7

Greets people coming into office or establishment, ascertains their wants, directs them to appropriate person or places and schedules appointments for employer:
Obtains name of caller coming into office and arranges for interview. Answers inquiries and provides information regarding activities carried on inside or outside of establishment. Records name, time of call, nature of business and person called upon. Schedules appointments with employer for clients, customers or patients, by mail, telephone or in person, and records time and date of appointment in appointment book. Indicates when appointments have been filled or cancelled. Telephones clients to remind them of appointments.
May prepare and dispatch accounts, and receive and record payments in ledger. May perform a variety of clerical duties, such as typing, filing, collecting and distributing mail and messages. May perform receptionist duties in a variety of offices and be designated accordingly; for example,
Receptionist, Business
Receptionist, Doctor's Office

4171-122 INFORMATION CLERK(clerical) DPT:368
GED: 3 SVP: 4 EC: 1 PA: L 4 5 6

Provides a variety of information to customers and the public, by performing one or any combination of the following duties:
Informs persons regarding activities carried on in office or organization. Tells customer where merchandise is located in retail establishment, and advises hotel guests concerning services, such as laundry and valet services. Answers requests for information from company officials and employees. Calls officials or employees to information desk, if required, or obtains answers to specific requests for information and provides it for inquirers. Answers inquiries regarding departures, arrivals, stops and destination of scheduled vehicles.
May keep record of questions asked. May operate public address system and answer telephones to provide information. May provide information in a particular establishment and be designated accordingly; for example,
Information Clerk, Department Store
Information Clerk, Hospital
Information Clerk, Hotel

4172-MAIL CARRIERS

This unit group includes occupations concerned with arranging and delivering mail according to specified routes, recording delivery of registered mail and collecting money for cash-on-delivery packages.

4172-110 LETTER CARRIER(gov. serv.) DPT:377
mail carrier; postman.
GED: 3 SVP: 3 EC: 0 6 PA: M 2 4 7

Delivers mail on established route after sorting it according to streets and numbers:
Inserts mail into compartments of mail rack to sort for delivery. Delivers letters, small packages and printed matter sent through the mail service. Collects money for cash-on-delivery packages. Records deliveries of registered mail. Leaves cards to inform patrons where to call for mail which could not be delivered, and returns undelivered mail to postal station or sub post office. Keeps records of and distributes cards for changes of addresses, and completes forms to notify publishers of changes.
May deliver telegrams or special types of mail. May drive motor vehicle to deliver mail along route outside corporate limits of town or city and be designated accordingly,
Rural-Mail Carrier

4173-MAIL AND POSTAL CLERKS

This unit group includes occupations in government or private business concerned with preparing, sorting and bagging mail, computing postal costs, recording daily transactions, selling postage stamps and money orders, and registering and insuring mail.

4173-110 GOVERNMENT-POSTAL CLERK, WICKET(gov. serv.) DPT:367
GED: 4 SVP: 4 EC: 1 PA: M 4 5 6 7

Conducts and records postal transactions at wicket of post office:
Sells postage and unemployment insurance stamps, postal cards and stamped envelopes. Fills out and sells money orders. Registers and insures mail and computes mailing costs of letters and parcels. Sorts mail according to province or route, address, name of person, organization or other scheme. Examines mail for correct postage. Cancels postage, using rubber stamp or cancelling machine. Records daily transactions on printed forms. Receives inquiries concerning mail delivery, theft and loss, completes appropriate forms and routes them for investigation. Posts circulars on bulletin board for public information. Issues hunting permits to shoot migratory birds. Accepts and records payments of government annuities and post office box rentals. Balances all transactions daily.

4173-114 EXPRESS CLERK(rail trans.) DPT:387

GED: 3 SVP: 4 EC: 1 5 PA: H 2 3 4 7

Sorts mail or packages enroute in express car; Receives parcels and valuables for express shipment. Sorts mail or packages in express car. Places valuables in express-car safe, and guards safe throughout journey. Loads and unloads express shipments to and from express car at train stops. Prepares waybills and reports on express shipments.

4173-118 REVENUE-POSTAL CLERK, WICKET(clerical) DPT:367

GED: 3 SVP: 3 EC: 1 PA: 1 4 5 6 7

Receives letters and parcels and sells postage stamps, postal cards, money orders and stamped envelopes in contract post-office station; Weighs parcels on scale and computes mailing cost based on weight and destination. Verifies weight of letters and computes cost of registering and insuring letters and parcels. Answers questions pertaining to mail regulations or procedures, in person and by telephone. Cancels postage on parcels, using rubber stamp. Balances all transactions daily.

4173-122 PARCEL-POST CLERK(clerical) DPT:387

mail-order sorter.
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Sorts, weighs, wraps, examines and affixes postage to parcel-post, express and air-freight packages and records collect-on-delivery (C.O.D.) and insurance information; Examines wrapping and, if necessary, rewaps packages for conformance to company standards and postal regulations. Weighs packages, and determines postage, using rate book, and affixes postage stamps to packages, using damp sponge, or uses postage meter. Records information; such as, value, charges and destination of C.O.D. packages in record book. Copies and attaches C.O.D. card to packages, to indicate amount to be collected. Addresses packages or compares with records to verify accuracy. Sorts parcels for shipment according to destination or other classification and places parcels in mail bags or bins.

4173-126 MAIL CLERK(clerical) DPT:587

GED: 3 SVP: 3 EC: 1 PA: L 4 7

Sorts incoming mail for distribution and dispatches outgoing mail; Opens envelopes by hand or with letter-opening machine. Stamps date and time of receipt on incoming mail. Sorts mail according to destination and type; such as, returned letters, adjustments, bills, orders and payments. Readdresses undelivered mail bearing insufficient or incorrect address. Collects, records and forwards incoming and outgoing registered mail. Examines outgoing mail for appearance and seals envelopes by hand or with envelope-sealing machine. Stamps outgoing mail with postage meter. Folds letters or circulars and inserts into envelopes. Mails letters, products, samples and promotional material to prospective customers. Keeps record of registered mail. May address mail, using addressing machine. May perform duties in a specific location and be designated accordingly; for example, Registered-Mail Clerk Trust-Mail Clerk

4173-130 MAIL SORTER(gov. serv.) DPT:687

mail clerk.
GED: 3 SVP: 3 EC: 1 PA: M 3 4 7

Sorts and processes mail in post office; Picks up and scrutinizes incoming mail to ensure that address is legible and correct, sufficient postage has been paid, parcels are in condition for delivery and postal regulations have not been contravened. Sorts incoming and outgoing mail into mail racks, pigeon-holes or lock bags (mail sacks with locks) according to destination. Segregates items requiring special handling owing to damage, insufficient postage, illegible and incorrect address or suspected contravention of postage regulations. Transfers mail from primary to final sorting areas, using wheeled equipment. Ties incoming sorted mail in bundles, indicating letter carrier's route number on each bundle and tosses tied bundles into lock bags. Counts and records number of bags dispatched.

May search directories to find addresses for incorrectly addressed mail. May transfer C.O.D., registered, special delivery, and short- paid mail to contract mail workers and letter carriers, maintain records for payment of services provided by contract workers, weigh and record mail and relieve other post office clerks. May perform duties in a railway station post office and be designated accordingly, Railway-Mail Clerk

4173-134 MAILER(clerical) DPT:584

GED: 2 SVP: 3 EC: 1 PA: M 4 7

Mails and delivers newspapers, periodicals, envelopes, cartons and other printed material; Wraps or bundles printed matter by hand or automatic bundler. Addresses bundles or wrapped printed matter by hand or using tying machine. Stamps, tags or labels material according to mailing lists and delivery orders, using stencils or stamping machine. Sorts bundles according to destination and places bundles to be mailed in specified mail bags. Stacks loads, and unloads bundles onto and from trucks and conveyors. Counts and keeps daily record of bundles and copies handled. May keep files of back-dated newspapers to provide research material. May keep card-record-distribution file of units mailed or delivered to subscribers and dealers. May drive truck to deliver bundles of newspapers, magazines and other printed material.

4173-199 OTHER MAIL AND POSTAL CLERKS

This group includes mail and postal clerks, not elsewhere classified; for example, those who handle and bag mail. A typical example of an occupational title covered by this residual group definition is: Mail Handler(clerical)

4175-TELEPHONE OPERATORS

This unit group includes occupations concerned with operating public and private telephone switchboards to relay incoming, inter-office and outgoing calls; computing toll charges; supplying information; and keeping related records.

4175-110 TELEPHONE OPERATOR(telecom.) DPT:464

GED: 3 SVP: 3 EC: 1 PA: S 4 5 6 7

Operates telephone switchboard to assist customers in establishing long-distance or local telephone connections; Observes signal light on switchboard, plugs cords into trunk-jack, and dials or presses button on key punchboard to make connections. Inserts ticket in time-stamping device to record time of toll calls. Consults chart to determine charges for pay-telephone calls and requests coin deposits for long-distance calls. Gives assistance to customers who have difficulty with local calls, by dialing numbers and informing them of area code numbers. Takes special action in cases of emergency; such as, fire, crime or accident. May make long-distance connections only and be designated accordingly, Long-Distance Operator

4175-114 TELEPHONE OPERATOR(clerical) DPT:564

switchboard operator.
GED: 3 SVP: 3 EC: 1 PA: S 4 5 6 7

Operates a telephone switchboard to relay incoming, outgoing and inter-office calls; Observes switchboard for incoming calls and moves cords, switches or other devices to contact person called. Makes connections for outgoing calls by plugging cords in jacks or operating switches. Makes long-distance calls or gives necessary instructions to other telephone operators. Ascertains and records charges for long-distance or other calls. Supplies information to callers and takes messages. Operates a system of bells or buzzers to call individuals to telephone. May keep record of calls placed and toll charges. May perform clerical duties such as typing and filing.

4175-118 TELEPHONE-ANSWERING-SERVICE
OPERATOR(bus. serv.) DPT:564
telephone secretary.
 GED: 3 SVP: 3 EC: I PA: S 4 5 6 7

Provides telephone-answering service for clients; such as, doctors, lawyers, executives, salesmen, tradesmen and others:
 Operates telephone switchboard to provide answering service for clients. Greets caller and announces name or phone number of client's office or establishment. Records and delivers messages, furnishes information, accepts orders and relays calls. Places telephone calls at request of client. Locates client in emergencies. Date stamps and files messages.

4175-122 DIRECTORY-ASSISTANCE OPERATOR(telecom.) DPT:664
information operator.
 GED: 3 SVP: 3 EC: I PA: S 4 5 6 7

Provides telephone information from central office switchboard:
 Plugs in headphones and accepts calls continually. Consults card reels or directories to answer questions or refers clients to sources of desired information.

4177-MESSENGERS

This unit group includes occupations concerned with running errands; sorting, delivering and collecting letters, packages and messages; distributing office supplies; and performing similar routine duties.

4177-110 MESSENGER, BANK(bank. & finance) DPT:367
bank runner.
 GED: 3 SVP: 4 EC: B PA: L 4 7

Collects and delivers cheques, securities, mail and other items, performing any combination of the following duties:
 Gathers items; such as, cheques, drafts and notes from various bank sections or departments, and prepares listing of items prior to delivering them to local clearing house, or to drawee bank for payment or acceptance. Delivers and picks up mail inside bank. Picks up incoming mail at post office and opens and sorts for internal distribution. Seals and stamps mail, using sealing machine and postage meter and delivers to post office. Collects data on daily transactions from branch banks at close of business hours and delivers to centralized data center for processing. Returns processed data to branch banks prior to commencement of next day's business to provide banks with up-dated accounts. Stores boxes of bank records on shelves in vault according to designated plan. Oversees destruction of bank records at expiration of legal retention date.
 May specialize in a particular activity and be designated accordingly, Records Custodian

4177-114 TELEPHONE MESSENGER, TELEGRAMS
 (telecom.) DPT:564
message relayer, telegrams.
 GED: 3 SVP: 3 EC: I PA: S 4 5 6 7

Receives and relays messages by telephone:
 Calls addressee, using telephone directories and card indexes to locate telephone number. Reads message and spells misunderstood words, using phonetic alphabet. Solicits reply to promote sale of services. Records message to be sent, in writing or using typewriter. Suggests rewording, if necessary, for clarity and conciseness. Quotes rates, explains classification, such as night letters, and reads sample messages to aid customer in preparing message. Counts words and figures and reads rate in rate book to bill customer. Ensures prompt handling of all wires received, and ensures delivery of confirmation of incoming wires.

4177-118 MESSENGER(clerical) DPT:673
 GED: 2 SVP: 3 EC: B 2 3 4 PA: M 4 7

Delivers messages and other items; such as, bonds, securities, mail, documents, packages, advertising copy, proofs or tear sheets to various departments within establishment or to other locations:
 Collects messages or other items and delivers them to offices or departments within establishment, or to other business concerns, by walking, using car, bicycle, motorcycle or riding public conveyance. Distributes office supplies to staff.
 May keep record of items received and delivered. May be concerned with special activity of messenger work and be designated accordingly; for example,
 Confidential Messenger
 Copy Boy
 Courier
 Runner

4177-122 DELIVERY BOY(ret. trade) DPT:674
 GED: 2 SVP: 3 EC: B 2 3 4 PA: M 2 3 4 7

Delivers orders to customers and unpacks merchandise in store:
 Walks, rides bicycle, or uses public conveyance to deliver merchandise to customers' homes. Collects money from customers for cash-on-delivery orders. Unpacks merchandise, marks prices on articles and stacks them on counters or shelves.
 May drive light delivery truck to transport merchandise. May sweep floors, run errands and wait on customers.

4177-126 TELEGRAPH MESSENGER(telecom.) DPT:674
 GED: 2 SVP: 2 EC: B 2 3 4 PA: L 4 5 6 7

Delivers telegrams and packages to consignees, and collects payment for messages delivered:
 Delivers telegrams and packages by walking, riding bicycle or using public conveyance. Collects payment for messages delivered.
 May drive automobile to deliver telegrams. May be designated according to method of delivery; for example,
 Telegraph Messenger, Automobile
 Telegraph Messenger, Bicycle

4177-199 OTHER MESSENGERS

This group includes messengers not elsewhere classified; for example, those who pass out handbills, samples and telephone directories. Typical examples of occupational titles covered by this residual group definition are:
 Handbill Passer(bus. serv.)
 Sample Distributor(bus. serv.)
 Telephone-Directory Deliveryman(bus. serv.)

4179-RECEPTION, INFORMATION, MAIL AND MESSAGE DISTRIBUTION OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with activities, such as receiving clients and customers; distributing information, mail and messages; providing customers with information concerning freight rates and shipping schedules; marking quotations on boards in grain brokers' offices; and preparing, sorting and routing telegrams.

4179-110 COUNTER CLERK(telecom.) DPT:367
 GED: 4 SVP: 5 EC: I PA: L 4 5 6 7

Prepares telegrams and telegraph money-orders and cashes money-order warrants at telecommunications office public reception counter:
 Quotes rates to customer wishing to transmit message or money, and collects amount due. Routes message written by customer to teletype operator for transmission. Pays amount due on money-order warrant to customer awaiting money at designated terminal point. Keeps records of receipts and disbursements and balances cash on hand at end of day.
 May be concerned with processing telegraph money orders only and be designated accordingly,
 Money-Order Clerk

4179-114 EXPRESS AND FREIGHT INFORMATION
CLERK(motor trans.; rail trans.) DPT:368
 GED: 3 SVP: 5 EC: I PA: S 4 5 6 7

Provides information concerning express and freight rates and shipping schedules:

Quotes express and freight rates by referring to rate book. Gives information to customer concerning shipping schedules and arrivals at express and freight terminals. Redirects telephone inquiries not concerned with general express and freight shipping to specific departments concerned.

4179-118 SERVICE MONITOR(telecom.) DPT:387
service observer.
 GED: 3 SVP: 5 EC: I PA: S 4 6

Monitors calls between telephone company employees and subscribers to assess quality of service to subscribers:

Plugs headphones into special intercept equipment and listens to telephone conversations. Records, on standard report form, such matters as technical errors, improper demeanour of employees or departures from company policy, and forwards reports to supervisor for further action.

May observe single groups of employees, such as service representatives.

4179-122 ROUTING CLERK(telecom.) DPT:567
 GED: 3 SVP: 4 EC: I PA: S 4 7

Sorts and routes telegrams or messages received by pick-up and delivery section of telecommunications office:

Places folded messages into envelopes for delivery. Accepts requests for message pick-ups within area served by office. Sends messages to customers within city via telephone, and to customers in distant cities through teletype service. Reads map to sort messages and pick-up requests into routes. Dispatches messengers to deliver messages. Accepts and records remittances returned for messages which have been picked up.

4179-126 BOARD MARKER, GRAIN QUOTATION(bank. & finance) DPT:587
 GED: 2 SVP: 2 EC: I PA: L 4 7

Marks grain quotations on board in grain broker's office:

Marks grain sales and price quotations opposite grain type and grade, on board, from information recorded on telex and transmitted from floor of grain exchange. Replenishes telex with tape.

May perform office duties such as handling mail, issuing office supplies and filing.

4179-130 OFFICE BOY(clerical) DPT:677
 GED: 2 SVP: 2 EC: I PA: L 4 5 6 7

Performs any combination of the following duties in government office or business office of commercial or industrial establishment:

Furnishes workers with clerical supplies such as paper, pencils and pens. Opens and sorts incoming mail for distribution and dispatches outgoing mail. Delivers oral or written messages. Collects, and distributes paperwork such as typed material, records or timecards among offices or departments.

May file material such as correspondence, reports and invoices. May operate office machines. May be concerned with a specific task and be designated accordingly,

Mail Boy

4179-134 TUBE OPERATOR(clerical) DPT:687
 GED: 2 SVP: 2 EC: I PA: S 4 7

Receives and routes messages through pneumatic-tube system:

Routes carriers containing items, such as mail, messages, orders, and accounting or shipping documents to destination, by placing them in pneumatic-tube system. Empties incoming pneumatic-tube carriers, and examines and sorts items. Inserts items in carriers and reroutes them to department indicated on carrier dial.

4179-199 OTHER RECEPTION, INFORMATION, MAIL AND MESSAGE-DISTRIBUTION OCCUPATIONS

This group includes reception, information, mail and message-distribution workers, not elsewhere classified; for example, those concerned with providing information on flight and train arrivals and departures. A typical example of an occupational title covered by this residual group definition is:

Caller(air trans.; rail trans.)

419-OTHER CLERICAL AND RELATED OCCUPATIONS

This minor group includes occupations, not elsewhere classified, concerned with collecting payments on accounts, adjusting and settling claims, arranging itineraries, providing tickets and reserving accommodation for travellers, registering guests in hotels and similar establishments, compiling and maintaining personnel records, dispatching men and equipment, collecting money from meters, reading water, gas and other meters, and performing other clerical duties of a general nature. These occupations are classified in the following unit groups:

4190 Supervisors, Other Clerical and Related

Occupations, n.e.c.

4191 Collectors

4192 Adjusters, Claim

4193 Travel Clerks, Ticket, Station and Freight

Agents

4194 Hotel Clerks

4195 Personnel Clerks

4197 General Office Clerks

4199 Other Clerical and Related Occupations, n.e.c.

4190-SUPERVISORS, OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C.

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of

workers engaged in collecting payments on accounts, adjusting claims, making travel arrangements, maintaining personnel records, and performing general office clerical duties.

4190-110 SUPERVISOR, CLAIMS ADJUSTERS(clerical)

DPT:138

Supervises and co-ordinates activities of workers engaged in investigating, validating and settling claims due to loss, accident and disaster, or other cause, and adjusting customers' complaints regarding merchandise or services, (Unit Group 4192):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Refers claims to company's lawyers when unable to reach settlement. Attends court hearings to present evidence.

4190-114 SUPERVISOR, COLLECTION CLERKS(clerical)

DPT:138

Supervises and co-ordinates activities of workers engaged in collecting payments on instalments or overdue accounts, and tracing whereabouts of customers whose addresses are unknown, (Unit Group 4191):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Reviews investigation reports prepared by collectors before forwarding to creditors. Handles difficult cases where collectors have been unable to obtain payment. Reviews and approves or decides against cases recommended for legal action by collectors.

4190-118 SUPERVISOR, GENERAL OFFICE CLERKS(clerical)

DPT:138

Supervises and co-ordinates activities of workers performing any combination of clerical activities which are of a general nature, (Unit Group 4197):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4190-122 SUPERVISOR, HOTEL CLERKS(cater. & lodg.)

DPT:138

chief clerk, hotel.

Supervises and co-ordinates activities of workers engaged in registering and assigning rooms to guests, issuing room keys, stamping and sorting incoming mail, transmitting and taking messages, answering inquiries pertaining to hotel services and registration of guests, and presenting statements and collecting payment from departing guests, (Unit Group 4194):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

4190-126 SUPERVISOR, PERSONNEL CLERKS(clerical)

DPT:138

Supervises and co-ordinates activities of Personnel Clerks engaged in work related to hiring personnel, providing information to job seekers, investigating applicants' work history, compiling and keeping personnel information relevant to activities, such as recruitment, training, promotion, attendance, retirement and discharge of employees, (Unit Group 4195):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with a particular personnel activity and be designated accordingly; for example,

Supervisor, Attendance Records
Supervisor, Promotions
Supervisor, Recruitment
Supervisor, Retirement

4190-130 SUPERVISOR, TRAVEL CLERKS(clerical)

DPT:138

Supervises and co-ordinates activities of workers engaged in clerical duties related to travel and transportation, such as arranging itineraries; providing tickets and reserving accommodation for travellers; selling airline, bus, railroad and steamship tickets, and arranging movement of passengers and goods, (Unit Group 4193):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with a particular travel activity and be designated accordingly,

Supervisor, Ticket Clerks

4190-134 SUPERVISOR, COPYRIGHT

CLEARANCE(broadcast., motion pic. & stage)

DPT:138

GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Supervises and co-ordinates activities of workers engaged in examining copyrights of musical and literary material for radio and television programs:

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Ascertains that permission has been granted, or confers with owners for use of copyrighted material. Supervises personnel in examination of material to detect libelous and slanderous statements, and notifies requisite authorities for necessary action.

May supervise the operation of music library, and the purchase of music arrangements within approved budgetary controls. May be responsible for determining that all material for radio and television programs complies with government regulations and be designated accordingly,

Supervisor, Commercial Acceptance

4190-138 SUPERVISOR, NURSING REGISTRY(medical)

DPT:138

GED: 5 SVP: 7 EC: 1 PA: S 5 6 7

Supervises activities of nursing registry, providing nurses for private duty according to regulations established by provincial professional nurses' association:

Maintains roster of nurses available for duty. Refers nurses as requested by clientele. Records number and type of calls received. Analyzes problems of registry to provide more efficient service and operations. Informs registering nurses of new and revised requirements and regulations. Assists in recruiting nurses for emergencies.

May be responsible for financial administration of registry.

4190-199 MISCELLANEOUS SUPERVISORS, CLERICAL AND RELATED OCCUPATIONS

This group includes clerical supervisors, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in soliciting and receiving newspaper advertisements, collecting coins from coin-machine boxes, completing forms and reports and disseminating information relating to customs laws, and interviewing the public and compiling information on various topics and public issues. Typical examples of occupations covered by this residual group definition are:

Supervisor, Advertising Clerks(clerical)
Supervisor, Coin-Machine Collectors(clerical)
Supervisor, Customs Brokerage Clerks(bus. serv.)
Supervisor, Public-Opinion Interviewers(clerical)

4191-COLLECTORS

This unit group includes occupations concerned with collecting payments on instalments or overdue accounts, and tracing whereabouts of customers whose addresses are unknown.

4191-110 BILL COLLECTOR(bus. serv.)

DPT:368

collection agent.

GED: 3 SVP: 4 EC: B PA: L 5 6 7

Collects overdue accounts, instalments, damage claims or cheques issued with insufficient funds, for collection agency:

Visits or telephones customer to collect amount due or arranges for payment at a later date. Traces addresses of customers who have moved by inquiring at post office or by questioning neighbours. Keeps records of accounts collected and those which require further action. Recommends legal action when it is impossible to collect payment of accounts by other means.

4191-114 LOCATOR(bus. serv.) DPT:368
skip tracer; tracer.
 GED: 3 SVP: 4 EC: B PA: L 5 6 7

Traces skips (debtors who change residence without notifying creditors, to evade payment of bills) for creditors or other concerned parties:
 Searches city and telephone directories, and street listings, and inquires at post office in attempt to locate skip. Interviews, telephones or writes former neighbours, friends, relatives and former employers to elicit information pertaining to whereabouts of skips. Follows up leads and prepares investigation report to creditor.

4191-118 COLLECTION CLERK(clerical) DPT:367
 GED: 3 SVP: 3 EC: I PA: S 5 6 7

Notifies customers of delinquent accounts and attempts to secure payment, using postal services or telephone:
 Removes delinquent account from file. Selects prescribed form letter and mails it to customer. Repeats process, using different forms if reply is not received within specified time. Calls customer on telephone in attempt to secure payment. Prepares statements by hand or using typewriter and forwards to supervisor or credit department for action if customer fails to respond. Sorts, reads, answers, and files correspondence relating to collection work. Receives payments and posts amount paid to customer's account.
 May obtain information on persons requesting credit. May prepare and type reports on cheques written off as losses. May personally interview customers regarding delinquent accounts and be designated accordingly,
 Past-Due-Accounts Clerk

4191-122 CLERK, CUSTOMER SERVICE(ret. trade) DPT:467
lay-away clerk.
 GED: 2 SVP: 2 EC: I PA: L 5 6 7

Receives payment on merchandise stored in lay-away department until customer calls for it, or ensures delivery after final payment:
 Places merchandise on shelves in storeroom. Keeps records showing amount of each payment, and balance due on account. Contacts customer when specified period of time has passed without payment, to determine if customer still desires merchandise. Gives merchandise to customer, or ensures delivery after customer has made final payment.

4191-199 OTHER COLLECTORS

This group includes other collectors, not elsewhere classified; for example, those who interview customers regarding delinquent accounts, and disconnect meters when customers vacate premises without notice, or refuse to make payment. A typical example of an occupational title covered by this residual group definition is:
 Collector, Special-Meter Reader(elec. power)

4192-ADJUSTERS, CLAIM

This unit group includes occupations concerned with appraising, investigating, validating and settling claims due to loss, accident and disaster, or other cause. Properties claim agents are classified in Unit Group 1179, OCCUPATIONS RELATED TO MANAGEMENT AND ADMINISTRATION, N.E.C.

4192-110 CLAIM ADJUSTER(insur. & real estate) DPT:118
public adjuster
 GED: 4 SVP: 7 EC: B PA: L 5 6 7

Investigates and adjusts claim for loss or damages filed under an insurance policy, or determines company's liability in claim or other action:
 Recommends legal action when it is impossible to collect payment of accounts by other means.

Reviews claim form and insurance policy to determine insurance coverage, or examines claim to determine items to be investigated. Interviews or corresponds with claimant, witnesses, doctors and other hospital personnel, examines police and hospital records, and inspects property damage to determine amount of company's liability. Prepares report of findings and negotiates settlement with claimant, or other adjusting agency, when there is division of responsibility. Recommends litigation when settlement cannot be negotiated, and attends litigation hearings.
 May investigate claims or adjust claims of a specific nature and be designated accordingly; for example,
 Adjuster, Casualty Insurance
 Adjuster, Fire Insurance
 Adjuster, Marine Insurance
 Claim Adjuster, Motor Vehicle
 Claim Adjuster, Railroad
 Claim Investigator

4192-114 SERVICE REPRESENTATIVE(bus. serv.) DPT:168
 GED: 4 SVP: 7 EC: I PA: S 5 6 7

Investigates dealers' claims for reimbursement of defective motor-vehicle parts:
 Examines parts claimed to be defective and approves or disapproves automobile dealer's claim. Assists dealer in handling unsettled claims by consulting with service personnel or customers. Reviews claim with dealer for labour or material adjustments. Prepares reports showing volume and types of claims handled and settlement allowed. Advises dealer and service personnel regarding service operations or construction of products. Studies dealer's organizational needs and advises him on matters; such as, parts, tools and equipment, to handle service volume.

4192-118 CLAIM EXAMINER(insur. & real estate) DPT:268
 GED: 4 SVP: 7 EC: I PA: S 5 6 7

Reviews settled insurance claims to ensure that payments and settlements have been made according to company practices and procedures:
 Analyzes data used in settling claim to ensure that the claim was valid. Reports overpayments, underpayments and other irregularities to management. Monitors claim costs including cost of claim administration.
 May confer with legal counsel on claims requiring litigation.

4192-122 ADJUSTMENT CLERK(clerical) DPT:368
complaint clerk
 GED: 4 SVP: 4 EC: I PA: L 4 5 6 7

Investigates customers' complaints about unsatisfactory service, damaged or incorrect merchandise or incorrect billing of accounts, performing any combination of the following duties:
 Reads written complaints or discusses difficulties with customers, and records information. Examines files or confers with other personnel to gather facts. Estimates value of lost or damaged articles. Reads meters or examines reports for weather conditions during billing period to determine cause of high bills. Traces and notifies laundry and dry-cleaning customers of unclaimed articles held in storage. Accepts payments for balance due, or issues vouchers for reimbursement. Orders exchange of merchandise, or repair or adjustment of meters and equipment.
 May be designated according to type of complaint adjusted; for example,
 Investigator, Bill Complaints
 Laundry-Adjustment Clerk

4192-126 TIRE-ALLOWANCE CLERK(ret. trade; whole. trade) DPT:367
 GED: 3 SVP: 4 EC: I PA: M 4 5 7

Determines allowance due on replacement of defective tires and tubes returned by customers:
 Examines tire or tube visually and tactually, to determine if defect resulted from faulty construction or road hazards. Ascertains degree of tread wear to prorate allowance on replacement by measuring tread depth with gauge, and taking into account size, type and quality of tires. Explains basis for allowance to customers, sales representatives or distributors.
 May remove serial numbers from still-usable tires and cut them with knife to prevent reuse. Completes claim form indicating percentage of tread wear and replacement price, according to adjustment manual.

4193-TRAVEL CLERKS, TICKET, STATION AND FREIGHT AGENTS

This unit group includes occupations concerned with clerical duties related to travel and transportation, such as arranging itineraries, providing tickets and reserving accommodation for travellers, selling airline, bus, railroad and steamship tickets, and arranging the movement of passengers and goods.

4193-110 TRAVEL AGENT(clerical) DPT:168
travel consultant.

GED: 4 SVP: 5 EC: I PA: S 5 6 7

Plans itinerary and schedules travel accommodations for customers, individually or by groups:

Ascertains customer's requirements, studies travel routes and considers cost, availability and convenience of different types of transportation, to select that most suitable to customer. Makes and confirms travel and hotel reservations and informs customer of bus, plane, ship and train connections. Marks suitable roads and possible detours on road map showing route from point of origin to destination and Indicates points of interest such as restaurants, hotels and emergency repair services available during trip. Calculates mileage of marked route. Notifies customer of travel dates, baggage limits and medical and visa requirements. Ensures that all travel clearances have been obtained. Aids customer to complete travel forms. Gives customer tickets for confirmed transportation and hotel reservations and collects required amount of money.

May calculate fares for taxi or nonscheduled or chartered bus trips from rate tables, at customer's request.

4193-114 RESERVATION CLERK(clerical) DPT:368
GED: 4 SVP: 4 EC: I PA: S 5 6 7

Obtains travel and hotel accommodations for employees and guests of business concern, issues tickets, types itineraries, and compiles reports of transactions:

Ascertains rates and obtains confirmation of travel and lodging space. Issues and validates airline, rail, and bus tickets. Prepares travel booklet for passenger, containing tickets, copy of itinerary, written lodging confirmations, pertinent credit cards, and travel suggestions. Keeps current directory of hotels, motels, and timetables, and answers inquiries concerning routes, fares, accommodation, and passport requirements. Reviews routine invoices of transportation charges, and types and submits reports to company and to transportation agencies. Prepares and types claim forms for refunds and adjustments and reports of transactions processed.

May escort travellers to or from transportation terminals.

4193-118 TICKET CLERK(air trans.; motor trans.; rail trans.; water trans.) DPT:368
GED: 4 SVP: 4 EC: I PA: L 4 5 6 7

Makes and confirms reservations and sells tickets for passengers travelling by air, motor, railway or water transportation:

Describes routes, services and accommodation, and arranges reservations, using timetables, manuals, reference guides and tariff books. Answers inquiries regarding departures, arrivals, destinations and other pertinent information. Telephones customer to inform him of changes in travelling arrangements, or to cancel or confirm reservation. Keeps inventory of available passenger space. Informs load control personnel, at various arrival and departure points of changes in passenger itinerary, to control space and ensure utilization of seating capacity. Computes cost of tickets and issues baggage receipts.

May check baggage and direct passenger to designated area for loading. May announce arrival and departures of buses, planes and trains.

4193-122 TRAVEL CLERK(clerical) DPT:368
travel-information clerk.

GED: 4 SVP: 4 EC: I PA: S 5 6 7

Provides travel information and arranges accommodations for tourists:

Answers inquiries, offers suggestions, and provides descriptive literature pertaining to trips, excursions, and entertainment features, such as sports events, concerts, and plays. Discusses routes, time schedules, rates, and types of accommodations with patrons to determine their preferences, and makes reservations. Verifies arrival and departure times, traces routes on maps, and arranges for baggage handling and other services requested by patrons.

May purchase, resell, and deliver tickets. May arrange for visas and other documents required by foreign travellers. May contact individuals and groups to sell package tours on own initiative.

4193-126 CARGO AGENT(air trans.) DPT:368
transportation agent.

GED: 3 SVP: 4 EC: I PA: M 4 5 6 7

Routes inbound and outbound air freight shipments to their destinations:

Takes telephone orders from customers and arranges for pick-up and delivery of freight to loading platform. Determines and arranges special handling requirements. Assembles cargo for export and prepares customs documents. Weighs items to be shipped and determines cost, using rate book. Itemizes charges of shipment and makes up bill for customer. Prepares manifest (list of cargo) to accompany shipment. Telephones shippers and consignees to notify them of delay or arrival of shipment, and to arrange for delivery. Maintains and updates tariff and company regulations relating to cargo service function. Provides information on rate, routing, acceptance requirements, import and export regulations and documentation requirements.

4193-130 RAIL-EXPRESS CLERK(rail. trans.) DPT:367
GED: 3 SVP: 3 EC: I PA: M 4 5 6 7

Accepts and releases express consignments, and computes and receives payments on account:

Weighs parcels received from customer, and refers to rate chart to compute charges. Writes receipts and bill of charges. Accepts payment or routes parcels collect-on-delivery. Sorts parcels and places them in baskets or on racks according to destination. Releases parcels to consignee upon presentation of written notice or other identification, and accepts payment where applicable. Answers inquiries regarding shipping procedures. Prepares lists to account for payments received, and balances cash on hand.

May route items, such as money and other valuables, firearms, radioactive materials or explosives and be designated accordingly, Money Clerk

4193-199 OTHER TRAVEL CLERKS, TICKET, STATION AND FREIGHT AGENTS

This group includes occupations, not elsewhere classified; for example, those who sell tickets, check baggage and maintain building and grounds of small railroad station. A typical example of an occupational title covered by this residual group definition is:

Station Agent(rail. trans.)

4194-HOTEL CLERKS

This unit group includes occupations in hotels and related establishments concerned with registering guests, renting rooms, checking keys and valuables and supplying information.

4194-110 HOTEL CLERK(cater. & lodg.) DPT:364
desk clerk; front clerk.
 GED: 3 SVP: 4 EC: 1 PA: L 4 5 6

Accommodates hotel patrons by performing any combination of the following duties:

Registers guests and assigns rooms to them. Issues room key and instructions to bellboy. Date stamps, sorts and racks incoming mail and messages. Sends and receives messages by telephone and teletype. Receives, delivers or forwards packages, baggage, freight and other items for hotel guests. Answers enquiries regarding hotel services and registration of guests by letter, telephone or in person. Settles guests' complaints in the absence of the manager or assistant manager. Makes and confirms reservations by letter or telephone. Presents statements to departing guests and collects payment.

May work in a particular section or at a specific duty and be designated accordingly; for example,

Day Clerk
 Key Clerk
 Reservations Clerk
 Room Clerk

4195-PERSONNEL CLERKS

This unit group includes clerical occupations concerned with compiling and maintaining personnel information relevant to activities such as recruitment, training, promotion, attendance, retirement and discharge of employees.

4195-110 PERSONNEL CLERK(clerical) DPT:367
employment clerk.
 GED: 4 SVP: 4 EC: 1 PA: S 4 5 6 7

Interviews applicants for employment, processes application forms and compiles and keeps personnel records:

Interviews applicants to obtain information; such as age, marital status, work experience, education, training and occupational interest. Informs applicants of company employment policies. Refers qualified applicants to employing officials. Writes letters to references indicated on application or telephones agencies; such as, credit bureaus and finance companies. Prepares documents relating to employees showing name, address, qualifications, rates of pay and other details and amends records as required. Keeps sickness record and registers leave absences, bonuses earned, pay and other information. Searches personnel records and forwards information to authorized persons.

May administer and score aptitude, personality and interest tests. May fill out and explain bonding application required by company. May telephone or write applicant to inform him of acceptance or rejection for employment. May issue badges, passes and identification cards and be designated accordingly,
 Identification Clerk

4197-GENERAL OFFICE CLERKS

This unit group includes occupations concerned with performing any combination of clerical duties of a general nature; such as, copying, computing, compiling, filing and recording information.

4197-110 MANIFEST CLERK(motor trans.; water trans.) DPT:384
 GED: 4 SVP: 5 EC: 1 PA: L 4 7

Compiles and types manifest showing freight shipped by land or water transport, for use at customhouse or terminals:

Types information on manifest; such as, name of shipper, tonnage and destination from bills of lading and shipper's declaration. Computes payments, and compares figures and totals on manifest with statement of accounts submitted by accounting department, to verify accuracy of manifest. Resolves discrepancies on accounting records or manifest. Prepares, issues and sends out bills. Compiles

records and reports. Tabulates and posts data in record books, and answers correspondence. Prepares medical, customs and immigration documents required to permit ship to enter and leave port.

4197-114 CLERK, GENERAL OFFICE(clerical) DPT:367
 GED: 4 SVP: 4 EC: 1 PA: S 4 5 6 7

Performs clerical duties; such as, copying, compiling, recording and otherwise processing information, requiring knowledge of office systems and procedures:

Copies and compares data and compiles records and reports. Tabulates and posts data in record books. Opens, sorts and distributes mail. Answers correspondence. Sends out and receives payment of bills and accounts, and issues receipts. Makes entries in books showing receipts, payments and other transactions. Takes orders and calculates buying or selling price of merchandise. Completes official forms relating to licences, sales taxes or other matters. Compiles summaries of transactions and other reports for information of management. Receives and interviews callers, arranges appointments, directs inquiries to appropriate person or department, and adjusts complaints. May operate office machines; such as, typewriter, adding, calculating and duplicating machines. May prepare payrolls and purchase supplies. May answer telephone requests from private wire or tie-line patrons regarding handling of messages and repair services.

4197-118 CONTRACT CLERK, MOTOR VEHICLE(ret. trade) DPT:464
 GED: 3 SVP: 5 EC: 1 PA: S 4 5 6 7

Verifies accuracy of, and completes motor vehicle sales' contracts: Verifies initial computation of total sales price made by salesman, calculates sales tax, transfer and licence fees, insurance premiums and interest, using rate tables, schedules and calculating machine. Verifies amounts and number of payments, trade-in allowance and total price of vehicle. Interviews customer to obtain additional information and explains terms of contract, particularly loan contracts. Corresponds with motor vehicle agencies to clear automobile titles. Obtains licence, signs registration documents on vehicle traded in and transfers titles on those sold. Contacts finance company to ascertain approval of loan. Communicates with customer or salesman to arrange for vehicle delivery. Keeps file of sales contracts, and records particulars of motor vehicles sold.

4197-122 WARD CLERK(medical) DPT:367
 GED: 3 SVP: 3 EC: 1 PA: L 4 5 6 7

Prepares and compiles records in hospital nursing-unit; such as, obstetrics, pediatrics and surgery:

Copies information such as patient's temperature, pulse rate and blood pressure, from nurse's records onto patient's medical file. Records diet instructions. Keeps file of medical data on patients in hospital unit. Prepares notices of patients' discharges to inform business office. Keeps record of absences and hours worked by unit personnel. Requisitions supplies designated by nursing staff. Answers telephone, relays messages to patients, and directs visitors to patients' rooms. May operate office machines, such as typewriter, adding, calculating and duplicating machines. May compile census of patients.

4197-126 PROPERTY CLERK(gov. serv.) DPT:567
 GED: 3 SVP: 3 EC: 1 PA: L 4 7

Receives, stores and releases prisoner's personal effects and recovered or stolen property:

Prepares record of articles and valuables received. Describes article, writes name of owner if known, name of person on police force from whom received, and reason for retention. Issues property to officer to be used as evidence at trial. Releases lost or stolen property to owners upon proof of ownership. Returns property of prisoner when released from custody.

4197-130 OFFICE CLERK(clerical) DPT:567
 GED: 3 SVP: 3 EC: 1 PA: L 4 7

Performs routine clerical duties; such as, copying and recording and otherwise processing information, not requiring knowledge of systems or procedures:

Writes and proofreads bills, statements or other documents, copying information from one record to another. Sorts and files records. Addresses envelopes or packages by hand, typewriter or

addressograph machine. Stuffs envelopes by hand or machine. Stamps or numbers forms. Counts, weighs or measures material or merchandise, and receives money from customers. Answers telephone, conveys messages and runs errands.
May stamp, sort and distribute mail. May file bills, statements or other documents and records. May record information; such as, name, address, article to be repaired, service to be rendered, and may prepare work order.

4197-134 POLICE-STATION CLERK(gov. serv.) DPT:584
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Records activities of police personnel and information concerning arrests made by policemen of district:
Keeps records, books, and files pertaining to activities of police personnel. Types prisoner's identification on arrest sheet or booking slip and forwards it to record division. Wraps and tags prisoner's money and valuables.
May receive calls by radio for police aid, and record them in station-house blotter.

4197-138 TAX CLERK(clerical) DPT:484
GED: 3 SVP: 2 EC: 1 PA: S 4 7

Computes provincial taxes on sales transactions:
Computes, manually or using calculating machine, provincial tax on sales transactions according to various rates in effect in provinces serviced. Keeps record of amount due and paid. Prepares total of tax payable to various provinces and submits totals to accounting department.

4199-OTHER CLERICAL AND RELATED OCCUPATIONS, N.E.C.

This unit group includes clerical occupations, not elsewhere classified, concerned with dispatching men and equipment, receiving and relaying messages, monitoring protective alarm systems, reading meters, issuing licences, proof-reading, monitoring and marking written tests, searching property titles, serving court orders, checking traffic patterns, processing mail or telephone orders, accepting classified advertising for publication, checking credit applications, collecting coins from meters, investigating customer complaints, changing charts on recording instruments, handling lost and found articles and performing other clerical functions involving activities, such as compiling, computing, copying and recording.

Dispatching Occupations 4199-110 through 4199-130

4199-110 DISPATCHER, OIL WELL SERVICES(oil & nat. gas) DPT:364
GED: 3 SVP: 5 EC: 1 PA: S 5 6

Dispatches oil-well-service crews to designated areas requiring service and maintenance:
Receives telephone requests for services from customers. Relays information to crews and field personnel, using telephone or radio. Dispatches crews to oil well servicing assignments. Prepares requisitions for supplies. Keeps time reports and other records. Confers with customer regarding drilling or production problems and outlines types of services available. Computes quantities of materials required and quotes prices for services.

4199-114 DISPATCHER(gov. serv.) DPT:364
GED: 3 SVP: 4 EC: 1 PA: S 4 5 6

Operates radio and telephone in forest-ranger office:
Operates radio and telephone equipment in ranger office to receive, transmit, and relay reports and requests between firefighting crews, fire-lookout stations, district office, and mobile units, and relays information or orders to and from officials concerned. Maintains

communications log, and maps location of fires, men, and equipment from field reports. Requisitions new equipment and office supplies and orders repairs to be made to equipment as required. Summons and dispatches firefighting crews in cases of emergency, using radio or telephone.

4199-118 DISPATCHER, RADIO(gov. serv.; water trans.) DPT:364
GED: 3 SVP: 4 EC: 1 PA: S 5 6

Receives complaints from public concerning crimes or emergencies, dispatches police, fire or ambulance cars and relays messages to remote units, using radio:
Records complaints received and radio calls relayed and received, in log book. Co-ordinates all police, fire, ambulance and other emergency requests in small municipalities, relaying instructions to radio unit concerned. Monitors broadcasting activities of mobile units and fixed stations and reports rule infractions or crew absence to supervisor. Prepares monthly report of radio traffic handled by station.
May operate teletype machine to send and receive messages. May direct activities of fire-alarm and signal operators engaged in receiving complaints from public. May dispatch tugboats, using landline and radio-telephone, or may dispatch ship pilot to ships entering or leaving port and be designated accordingly; for example, Dispatcher, Ship Pilot(water trans.) Dispatcher, Tugboat(water trans.)

4199-122 FIRE-ALARM OPERATOR(gov. serv.) DPT:364
dispatcher, fire department.
GED: 3 SVP: 4 EC: 1 PA: S 4 5 6

Operates municipal fire alarm system and notifies firemen of location of fire:
Receives incoming fire calls by telephone, through alarm system or radio transmitter and receiver. Questions caller, observes alarm register that codes location of fire, and scans running cards to determine whether fire is located within area served by fire department. Notifies fire stations, using radio, and starts alarm system that automatically contacts all fire stations and indicates location of fire. Relays messages received from scene of fire, such as requests for additional help and medical assistance. Records date, time, type of call and destination of messages received or transmitted. Tests alarm system periodically by contacting fire stations.

4199-126 PROTECTIVE-SIGNAL OPERATOR(bus. serv.) DPT:364
GED: 3 SVP: 4 EC: 1 PA: L 4 5 6 7

Monitors electrical protective alarm system in central station to detect disturbances, such as fire, burglary or other irregularities and notifies alarm investigators for appropriate action:
Interprets coded audible or visible signals received on alarm signal console panel, by direct wire or register tape from subscriber's premises, that indicate opening and closing of protected premises, progress of watchmen, unlawful intrusions or fire. Notifies investigators of location of alarm and relays messages to patrol cars, using two-way radio communication equipment. Records changes in subscriber opening and closing schedules. Prepares daily alarm activity and subscriber service reports. Adjusts alarm equipment in central station to ensure efficient operation, using hand tools. Reports irregularities of incoming signals to supervisor for corrective action.

4199-130 RADIO-TELEPHONE OPERATOR, HIGHWAYS(gov. serv.) DPT:364
GED: 3 SVP: 4 EC: 1 PA: S 4 5 6

Operates two-way radio and teletype system to relay messages and reports between personnel in radio-equipped vehicles or other district offices of provincial highway maintenance department:
Receives reports and requests from subsidiary yards and mobile staff, and transmits information to persons concerned, using two-way radio, telephone or teletype equipment. Prepares summary reports of road construction and maintenance operations, and transmits data to headquarters or other districts. Transmits road condition and weather reports to headquarters at specified intervals. Records all messages received or transmitted in communications log.

Other Clerical Occupations 4199-150 through 4199-299

4199-150 COPY CUTTER(print. & pub.) DPT:167
GED: 4 SVP: 8 EC: 1 PA: L 4 7

Examines, apportions and distributes editorial and classified advertising copy to typesetting-machine operators:
Examines copy to determine date of publication and type faces specified for headings and body. Cuts copy into sections requiring different type faces and marks section with type face required. Distributes sections of copy to type-casters. Cuts body of copy into sections and distributes sections to linotype operators to expedite casting and subsequent proof-reading. Marks sections to aid in assembling type at galley bank.

4199-154 BUS-TRANSPORTATION-SERVICE CO-ORDINATOR(motor trans.) DPT:118
district-sales representative.
GED: 4 SVP: 6 EC: 1 PA: L 4 5 6

Co-ordinates passenger bus agency activities along routes, to provide improved service to patrons:
Selects passenger bus depot sites along routes and sets up agreement between company and agent. Inspects bus depots to ensure conformance to company standards regarding food and passenger comfort facilities. Collects and audits ticket sales records and computes agent's commission. Advises agent of bus schedule changes. Investigates bus accidents and disruptions to service, and reports findings to manager.

4199-158 MUNICIPAL OFFICE CLERK DPT: 368
(gov. serv.)
GED: 4 SVP: 6 EC: 1 PA: S 4 5 6

Performs administrative and clerical duties required by municipal government unit:
Drafts agenda and by-laws, organizes and attends meetings for city or town council. Collects information, answers and keeps files of official correspondence and maintains records of contracts and other official documents.
May develop systematic collection of books and periodicals and co-ordinate activities of personnel employed in municipal libraries.

4199-162 SUGGESTION-PROGRAM CLERK(clerical) DPT:368.
GED: 4 SVP: 6 EC: 1 PA: S 5 6

Compiles, records, reviews and processes suggestions submitted to Suggestion Award Committee:
Records suggestions in incoming register, and stamps time and date of receipt. Prepares data card for computer records and assigns subject code. Reads suggestions submitted by employees to become familiar with proposals and records them on follow-up cards. Detaches acknowledgement copy and returns to sender. Reviews suggestions for clarity, readability and completeness before presenting copies to Suggestion Award Committee. Requests investigation and report on feasibility from department concerned with subject. Requisitions cash awards recommended for accepted suggestions. Schedules distribution of awards to winners and arranges for publicity. Writes letters to originators of rejected suggestions explaining reasons for non-acceptance. Explains suggestions program to meetings of firms, executives and others.
May attend meetings of domestic and foreign Suggestions Award Associations to exchange ideas.

4199-164 ENGINEERING CLERK(clerical) DPT:387
GED: 4 SVP: 6 EC: 1 PA: S 4 7

Prepares service manuals and relevant parts references, following specified standards in manufacturing plant:
Examines parts records to verify that detail drawings have been made for part to be described. Writes description of parts and assigns code numbers, titles and drawing references. Compiles servicing manuals describing operation of systems and components, and routine servicing procedures; such as, lubrication of parts and charging of batteries. Transcribes blueprint data into compact paragraphs. Maintains record of engineering modifications to keep parts records up-to-date.

4199-166 INVESTIGATOR(bus. serv.) DPT:368
GED: 4 SVP: 5 EC: 1 PA: S 4 5 6

Investigates background and personal characteristics of persons applying for credit, employment or insurance and prepares report for client:
Interviews applicant or customer to obtain information; such as, financial standing, credit, work and accident history and moral and social behaviour. Contacts neighbours, employers or former employers, bank and credit agencies, and check personal references, to verify data. Consults city directories to verify residence history, and examines public or court records to determine if applicant has history of bankruptcies, liens or other court actions. Evaluates results of investigation, and compiles report of credit information or risk-rating assigned by sources contacted.
May assign credit rating to individual or business establishment. May recommend approval or rejection of applicant as insurance or security risk. May be designated according to purpose of investigation; for example,
Credit Investigator
Insurance Investigator

4199-170 TEST CLERK(clerical) DPT:368
GED: 4 SVP: 5 EC: 1 PA: S 4

Monitors and scores psychological, vocational and educational tests, or scores objective-type examination papers, and records grades of those trying tests:
Verifies admissions' credentials of individuals and distributes test blanks or apparatus to them. Reads instructions and demonstrates use of apparatus or discusses practice exercise to familiarize individuals with testing material. Monitors test group to ensure compliance with directions, and times test with stop watch. Scores test with key or electric-marking machine, and records results on test paper, work application or profile form. Totals errors, and computes and records percentage grade on card of testee.
May average test grades to compute standing. May use weighted factors in computing test grades and arriving at final averages.

4199-174 PROOF-READER(clerical) DPT:668
GED: 4 SVP: 5 EC: 1 PA: S 4 5 6 7

Reads typescript or proof of typed material to detect and mark for corrections, any grammatical, typographical or compositional errors:
Places proof and copy side by side on desk and reads one sentence or paragraph at a time alternating between copy and proof, or follows original copy word for word as another person reads aloud or copy is played back from a tape recorder. Marks proofs with pencils, using codes to indicate deviations from copy or to instruct printing machine operators to alter typographical details, such as indentation, margin, letter type size and case. Discusses grammatical or compositional discrepancies in copy with initiator and obtains signature on copy to authorize change. Places marked proof in tray for corrections, and later checks proof of corrected type. Writes initials, time and date on proof to indicate approval of corrections, and authorize assembly of set type into final form for printing.

4199-178 BUS-AND-TAXI-TERMINAL CLERK(motor trans.) DPT:364
GED: 3 SVP: 5 EC: 1 PA: L 4 5 6 7

Receives and counts cash and tickets, and records information submitted by drivers, for bus or taxi shift runs:
Receives fares, ticket register readings, tickets and waybills from drivers reporting in from runs. Counts cash or tickets by hand or using coin-counting machines and records amounts. Copies or types data; such as, driver identification, route number, hours, gas consumption, mileage, ticket sales and accident information, on specified report or accounting forms. Corrects and records errors made on drivers' reports. Issues ticket books, instruction cards and petty cash to drivers. Records lost-and-found articles turned in by drivers.
May answer telephone inquiries regarding bus and taxi schedules and fares.

4199-182 LICENCE CLERK(gov. serv.) DPT:368
GED: 3 SVP: 5 EC: 1 PA: S 4 5 6

Issues licences or permits to applicants according to government regulations:

Questions persons and checks application forms to obtain information; such as, name, address, age and occupation, and records data on prescribed form. Ascertains that persons are eligible for licence or permit by examining documents and results of specified written or oral tests. Issues licences and permits; such as, driver's, automobile, dog and bicycle licences, and building and business permits.

4199-186 ORDER CLERK(clerical) DPT:368
GED: 3 SVP: 5 EC: 1 PA: S 4 5 6

Processes merchandise orders received from customers by mail, telephone, or in person:

Writes details of customer's order, such as size, type, and date merchandise desired, or takes order over telephone or intercommunication system for food and beverages. Informs customer of receipt of order, price, shipping date, and possible delay, or requests additional information required to complete order. Passes orders to appropriate department for processing or records and files them according to expected delivery date. Checks merchandise to ensure that filling of order is correct and complete and approves delivery. Sorts cash-on-delivery tickets according to type of delivery, and computes charges on bills and amounts collected. May contact customer to verify delivery of order.

4199-190 TITLE SEARCHER(insur. & real estate) DPT:388
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Compiles abstract of mortgages, deeds, contracts, judgments and other documents pertaining to property title:

Visits registry office, real estate or title-insurance company office to search records for appropriate property lot number and plan. Examines documents to trace property title. Follows title chain through to present owner, to verify clear title and ensure that there are no encumbrances, such as liens, unpaid tax assessments or mortgages, assigned rights-of-way or mining rights. Records data on abstract form and delivers it to law office or to client.

4199-194 CLASSIFIED-ADVERTISING CLERK(clerical) DPT:368
GED: 3 SVP: 4 EC: 1 PA: S 4 5 6 7

Receives customers' orders for classified advertising, by mail, in person or by telephone, at reception counter of newspaper:

Writes or edits copy, and determines charges from rate schedules. Advises customers regarding matters, such as rates, advertising space and cancellation privileges. Maintains file of orders taken. Corresponds with advertisers to answer inquiries and to request payment of accounts. Assigns box numbers to anonymous advertisements.

May set up display advertisements, using knowledge of formats, size of type and rates. May record payments due and amounts received. May examine and mark newspaper to provide information to composing room.

4199-198 CREDIT-AUTHORIZATION CLERK(clerical) DPT:368
GED: 3 SVP: 4 EC: 1 PA: L 4 5 6

Checks customer's credit limit and standing, and authorizes charges against customer's account:

Receives charge slip or credit request by mail, or receives information over telephone from sales clerk. Verifies credit standing of customer from computer or other records, and approves charges up to customer's credit limit. Refers credit charges in excess of limit to supervisor for approval.

May file sales slips in customer's ledger for billing purposes. May prepare credit cards or charge account plates.

4199-202 COMPILER(clerical) DPT:388
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Compiles and classifies directories, survey findings, opinion polls, census reports and lists of names and addresses from data obtained from surveys or census taking:

Compiles names, addresses, vital statistics and other facts or opinions obtained from business subscribers or persons in rural communities or cities. Checks information for completeness and accuracy. Arranges information in specified order or grouping; such as, by name, location, sex, occupation or affiliation.

May be designated according to type of information compiled; for example, Directory Compiler, Mailing-List Compiler, Survey Compiler

4199-206 STOWAGE CLERK(water trans.) DPT:388
GED: 3 SVP: 4 EC: 1 PA: L 4

Prepares daily control form of space available for loading cargo in company's ships:

Records on control sheet, previous day's bookings by ship and type of cargo. Calculates from ship's plan, remaining space available in various areas; such as, refrigeration, container and general cargo areas. Prepares loading and stowage plan, in co-operation with ship's agent, to ensure that weight of cargo is equally distributed in holds.

4199-210 SURVEY NOTE-KEEPER(prof. & tech., n.e.c.) DPT:568
GED: 3 SVP: 4 EC: 1 PA: S 4 5 6

Keeps detailed notes, descriptions, records and sketches of data procured by survey party:

Records information; such as, sketches of measurements, angles and elevations received from members of survey party for future use. Gives required information from notes to instrument man, surveyor or other member of survey party.

May calculate specific information from field notes.

4199-214 PUBLIC-OPINION COLLECTOR(clerical) DPT:368
public interviewer.
GED: 3 SVP: 3 EC: B PA: L 4 5 6

Interviews public and compiles statistical information on topics, such as public issues or consumer buying habits:

Contacts people at their homes or places of business, approaches them at random on street, or contacts them by telephone following specified sampling procedures. Asks questions following outline on questionnaire, and records answers. Reviews, classifies and sorts questionnaires following specified procedures and criteria.

May tally and prepare statistical reports on answers to questions. May participate in federal, provincial or local population surveys and be designated accordingly, Census Taker(gov. serv.)

4199-218 CLERK, MAINTENANCE SERVICE(clerical) DPT:368
GED: 3 SVP: 3 EC: 1 PA: S 4 5 6

Receives requests for maintenance services and relays them to appropriate section for required action:

Receives telephone and written requests from other departments for maintenance services, such as repair work to buildings or facilities, machine adjustments, and renewals or installation of other plant property. Relays requests to appropriate maintenance section for action. Keeps record of requests, materials used, and services rendered. Requisitions maintenance supplies.

May review routine inspection reports and issue work orders to correct irregularities. May dispatch crew to carry out repairs.

4199-222 DIET CLERK(clerical) DPT:368
GED: 3 SVP: 3 EC: 1 PA: S 4

Compiles dietary information for use by kitchen personnel in preparation of foods for hospital patients:

Examines diet order received from wards and lists portions and foods for each type of diet. Consolidates amounts on master menu to inform

kitchen personnel of food requirements. Lists quantities of specific foods, such as vegetables and meats to be prepared in kitchen. Informs kitchen staff of new diets or changes. Makes necessary changes on list.

May type menus, discharge diets and diet-tray cards. May keep records of and prepare reports on perpetual inventory, food purchases, total meals served and food costs.

4199-226 TRACING CLERK(clerical) DPT:368
GED: 3 SVP: 3 EC: 1 PA: L 5 6

Investigates customers' complaints and traces lost, misplaced or delayed items; such as, bills, invoices, merchandise and correspondence:

Traces items within various departments of company, and determines cause of mistakes. Corresponds with customers, manufacturers, shippers and other sources to trace items. Prepares report to make necessary adjustments.

4199-230 CHART CHANGER(clerical) DPT:684
GED: 3 SVP: 3 EC: B PA: L 4 7

Changes charts on recording instruments:

Checks and corrects calibration of recording instrument. Removes and replaces charts, cleans recording pen and refills it with ink. Repairs instruments by replacing whole mechanisms. Adjusts instrument by turning screw to correct reading as tested by voltmeter.

May wind clock springs on mechanically operated instruments. May compute average recordings for each chart. May drive automobile over established route to change charts in unattended stations.

4199-234 METER READER(elec. power; utilities, n.e.c.; water works) DPT:568
GED: 3 SVP: 3 EC: B PA: L 2

Reads electric, gas or water-consumption meters, and records volume used by residential and commercial consumers:

Walks over established route, and takes readings of meter dials. Checks meters and connections for defects, damage, and unauthorized connections. Reports irregularities on forms, for necessary action by servicing department. Checks readings to locate abnormal consumption, and records reasons for fluctuations if meter is changed. Returns route book to business office for billing purposes. Checks constants (average individual customer consumption) on meter cards. Reads, resets and reseals meters. Records changes when customers have moved without notification.

May drive a motor vehicle. May take applications for new service. May be concerned with reading a particular type of service meter and be designated accordingly; for example,
Electric-Meter Reader(elec. power)
Gas-Meter Reader(utilities, n.e.c.)
Water-Meter Reader(water works)

4199-238 COPY HOLDER(clerical) DPT:668
GED: 3 SVP: 3 EC: 1 PA: S 5 6 7

Reads copy to a proof-reader to correct proofsheets of printed matter: Reads original copy aloud, calling out punctuation marks, and spelling unusual words and proper names. Follows original copy word for word as proof-reader reads proofsheets aloud. Calls attention to discrepancies between copy and proof.

May read original copy into tape recorder to be re-run by proof-reader.

4199-242 BROADCAST CLERK(broadcast., motion pic. & stage) DPT:588
GED: 3 SVP: 3 EC: 1 PA: S 4 6

Examines scripts and monitors radio and television programs to detect and report on contractual and copyright conditions:

Records names and time used by local firms in advertising, obtaining information from daily program log. Ensures that production is according to conditions of contract, and prepares written report on volume and quality of reproduction. Submits written report of findings to advertisers.

May examine script of radio and television programs to ensure that permission has been granted for use of copyrighted materials, and be designated accordingly,
Copyright Clerk

4199-246 TRAFFIC CHECKER(gov. serv.; motor trans.)

DPT:367

GED: 3 SVP: 2 EC: O PA: S 4 5 6

Secures information for use in highway planning by interviewing motor vehicle drivers at specified road intersection or highway:

Places equipment, such as barriers, signs and automatic vehicle counting devices on roads or highways. Signals driver to stop, presents identification credentials, and explains reason for stopping vehicle. Questions automobile, bus or truck driver to obtain data, such as itinerary and purpose of trip. Records results of interview and permits driver to continue journey. Secures information on load carried, whether passenger or cargo, and type and weight of vehicle.

May obtain information by observing traffic along bus, streetcar or subway routes and record information for analysis and planning of transit services. May count traffic only at a specified spot and be designated accordingly,
Traffic Counter

4199-250 POLL CLERK(gov. serv.) DPT:568

GED: 3 SVP: 2 EC: 1 PA: S 5 6

Performs clerical duties at polling station during elections:

Inserts check mark opposite name of elector on official voting list and records elector's name, address, and occupation in poll book. Tabulates votes cast in favour of each candidate as called out by designated official after poll has closed.

4199-254 PARKING-METER COLLECTOR(gov. serv.) DPT:684
GED: 2 SVP: 2 EC: O PA: M 4

Collects money from coin boxes of parking meters, following established route:

Pushes or pulls two-wheeled cart, with money container attached, to meters. Opens meter, using key. Removes coin box and empties coins into money container. Replaces coin box, winds meter mechanism and locks meter, using key. Examines parking meter to determine if repairs or adjustments are required.

May adjust and repair spring mechanism or timing device, using hand tools. May install parking meters on stands. May paint parking meters and stands.

4199-258 LOST-AND-FOUND CLERK(clerical) DPT:567
GED: 2 SVP: 2 EC: 1 PA: L 4 5 6

Receives, returns, and maintains records on articles that have been lost or found in places, such as stores and public conveyances:

Inspects articles and sends letters to owners when identification is known. Tags and places articles in drawers, shelves, racks or safe. Secures data from customer, on telephone or in person, regarding lost articles, and returns found articles to owner. Obtains owner's signature on form before releasing article. Returns valuables to finders if not claimed within a stated period and donates less valuable articles to charitable organizations.

4199-262 COLLECTOR, COIN BOX(clerical) DPT:667
GED: 2 SVP: 2 EC: O PA: M 4

Collects coin boxes from telephone pay stations:

Unlocks telephone faceplate and removes box containing money. Inserts empty box and locks faceplate. Replaces telephone books and reports malfunctioning telephones to repair department. Delivers coin boxes to central depot for machine counting, tabulating and customer payment. Pays subscriber a percentage of collection when it is above amount guaranteed. Keeps records of collections, balances due and refunds.

4199-266 PROCESS SERVER(bus. serv.) DPT:668
GED: 2 SVP: 2 EC: B PA: L 5 6

Serves court orders and processes, such as writs, subpoenas, summonses, and divorce papers:

Receives documents to be served from magistrate or lawyer, locates person to be served through personal inquiries and delivers document. Records time and place of delivery for future reference.

**4199-299 MISCELLANEOUS CLERICAL AND RELATED
OCCUPATIONS**

This group includes miscellaneous clerical and related workers, not elsewhere classified; for example, those who classify stamps, examine and verify photoprint numbers to ensure delivery of correct prints to customer, collect fare-box tills from transit buses and subway stations,

and perform clerical tasks in a railroad classification yard. Typical examples of occupational titles covered by this residual group definition are:

Fare-Box Collector(motor trans.)
Photoprint Checker(clerical)
Stamp Classifier(ret. trade)
Yard Clerk-Chauffeur(rail trans.)

SALES OCCUPATIONS

This major group includes occupations concerned with selling commodities and services, buying commodities for resale, and with conducting wholesale and retail businesses, on their own or owners' behalf or in partnership. Managing supervisors of individual chain stores and of departments in stores are in this Major Group. Sales managers are in Unit Group 1137, **SALES AND ADVERTISING MANAGEMENT OCCUPATIONS**. **SALES OCCUPATIONS** are classified in the following minor groups:

- 513/514 Sales Occupations, Commodities
- 517 Sales Occupations, Services
- 519 Other Sales Occupations

513/514-SALES OCCUPATIONS, COMMODITIES

This minor group includes occupations concerned with conducting wholesale or retail businesses which sell commodities, on own or owners' behalf or in partnership; supervising and co-ordinating activities of workers directly and indirectly engaged in selling commodities; selling equipment and providing technical information about its composition, utilization and maintenance; selling commodities on a wholesale basis in an allotted geographical area; and selling and demonstrating commodities in wholesale and retail trade establishments and homes, on the street, and from door to door. Sales managers are in Unit Group 1137, **SALES AND ADVERTISING MANAGEMENT OCCUPATIONS**. **SALES OCCUPATIONS, COMMODITIES** are classified in the following unit groups:

- 5130 Supervisors: Sales Occupations,
Commodities
- 5131 Technical Salesmen and Related Advisers
- 5133 Commercial Travellers
- 5135 Salesmen and Salespersons, Commodities,
n.e.c.
- 5137 Sales Clerks, Commodities
- 5141 Street Vendors and Door-to-Door Salesmen
- 5143 Newsboys
- 5145 Service Station Attendants
- 5149 Sales Occupations, Commodities, n.e.c.

**5130-SUPERVISORS: SALES OCCUPATIONS,
COMMODITIES**

This unit group includes occupations, as described under the master titles, 01-180 **MANAGING SUPERVISOR** (any ind.) and 01-250 **SUPERVISOR/FOREMAN** (any ind.), concerned with conducting wholesale or retail businesses, on own or owners' behalf or in partnership; or supervising and co-ordinating the activities of workers engaged in selling commodities.

- 5130-110 **DEPARTMENT SUPERVISOR,
SUPERMARKET** (ret. trade) DPT:138
department manager, food store.

Supervises and co-ordinates activities of workers engaged in stocking shelves and displays with merchandise, and assisting customers in department of self-service supermarket (Unit Group 5137):

Performs duties as described under master title, 01-250 **SUPERVISOR/FOREMAN** (any ind.). Orders merchandise, supplies and equipment. Plans department layout, shelf arrangement, signs and displays.

May perform duties of workers supervised. May be designated according to department supervised; for example,

Grocery-Department Supervisor Produce-Department Supervisor
Meat-Department Supervisor

- 5130-114 **MANAGING SUPERVISOR, RETAIL
STORE** (ret. trade) DPT:138
department manager; store manager.

Plans, organizes, directs and controls the operations of a retail- trade establishment or unit of an establishment concerned with buying goods and reselling them to the public on own or owners' behalf or in partnership, and supervises and co-ordinates activities of sales personnel (Unit Groups 5135 and 5137):

Performs duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.).

May be designated according to type of merchandise sold in retail store or department; for example,
Department Manager, Men's Wear Florist
Drug-Store Manager Manager, Shoe Department

5130-118 MANAGING SUPERVISOR, SERVICE STATION (motor vehicle; ret. trade) DPT:138
gas-station manager; service-station manager.

Plans, organizes, supervises and co-ordinates the operation of a retail automobile-service-station engaged in fueling, lubricating and servicing motor vehicles (Unit Group 5145):

Performs duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.). Specializes in operating a retail service-station.

May perform duties of workers engaged in service or repair of motor vehicles.

5130-122 MANAGING SUPERVISOR, WHOLESALE ESTABLISHMENT (whole. trade) DPT:138
wholesaler.

Plans, organizes, directs and controls the operations of a wholesale establishment, or department of the establishment, engaged in buying and warehousing merchandise and selling it to retail, industrial, commercial and institutional consumers on own or owners behalf or in partnership, and supervises and co-ordinates activities of establishment personnel (Unit Group 5135):

Performs duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.). Supervises and co-ordinates activities of workers assembling goods in large lots and redistributing goods in smaller quantities. Advises retail clientele on present and future market conditions.

May import and export merchandise and be designated accordingly; for example,
Importer-Exporter

5130-126 SUPERVISOR, DOOR-TO-DOOR SALESMEN (ret. trade) DPT:138

Supervises and co-ordinates activities of workers engaged in door-to-door sales (Unit Group 5141):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Reviews orders received by workers and compiles sales records.

May be designated according to product sold; for example,
Magazine-Subscription-Crew Leader

5130-130 SUPERVISOR, NEWSPAPER SALES (print. & pub.) DPT:138
district circulator; district manager.

Supervises and co-ordinates activities of workers engaged in selling newspapers to residential customers on established routes or to passers-by on streets. (Unit Group 5143):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Compiles records of papers delivered and sold. Investigates customer complaints and collects delinquent accounts.

May drive truck to deliver papers to street stands or residential route drops.

5130-199 OTHER SUPERVISORS, COMMODITY SALES OCCUPATIONS

This group includes commodity sales supervisors, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in selling commodities in commissaries or company stores. Typical examples of occupational titles covered by this residual group definition are:

Supervisor, Commissary (ret. trade)
Supervisor, Company Stores (ret. trade)

5131-TECHNICAL SALESMEN AND RELATED ADVISERS

This unit group includes occupations concerned with selling scientific and technical commodities of a chemical, mechanical, electrical or electronic nature, light, heat and power and associated services. Duties include: providing specialized information to architects, engineers or other potential customers about the composition, installation, utilization, and maintenance of their product; preparing or arranging for preparation of financial and operational estimates to show cost reduction or efficiency increase resulting from proposed changes in materials, machines or methods; and drawing up or arranging for the preparation of plans and operating specifications. These occupations require a scientific or technical knowledge normally obtained from at least two or three years of post-secondary-school education or its equivalent.

5131-110 SALES ENGINEER, LIGHT, HEAT AND POWER (elec. power; utilities, n.e.c.) DPT:158
industrial representative.

GED: 5 SVP: 8 EC: 1 PA: L 5 6

Provides technical advice and engineering assistance to prospective and existing large industrial, commercial and institutional consumers of electric power, natural gas or steam to promote increased use of power or fuel:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in promoting sale of electricity, gas, or steam to large consumers. Studies plans and existing installations to determine customer's lighting, heating or power requirements. Calculates billing rates to be applied according to amounts of power or fuel consumed. May sell power distribution or heating equipment to customers. May be designated according to type of power or fuel sold.

5131-114 TECHNICAL SALESMAN, ELECTRONIC-DATA-PROCESSING (bus. serv.) DPT:158
data-processing-sales representative.

GED: 5 SVP: 8 EC: 1 PA: L 5 6

Sells electronic computer equipment and services to process payroll, bank account, inventory, and engineering, scientific, and other data: Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling electronic-data-processing equipment and services to meet the requirements of customers.

5131-118 TECHNICAL SALESMAN, AIRCRAFT (whole. trade) DPT:153
GED: 5 SVP: 7 EC: 1 PA: L 4 5 6 7

Sells aircraft and aircraft parts and equipment to dealers and commercial users:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling aircraft and aircraft parts and equipment. Demonstrates aircraft in flight. Prepares contracts for aircraft storage and maintenance services.

May appraise aircraft for trade-in value.

5131-122 TECHNICAL SALESMAN, AGRICULTURAL EQUIPMENT AND SUPPLIES (whole. trade) DPT:158
GED: 5 SVP: 7 EC: 1 PA: L 5 6

Sells agricultural machinery, equipment and supplies; such as, tractors, combines, milking machines, tools, fertilizers and feeds:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling agricultural machinery, equipment and supplies. Provides technical advice on crop-raising, animal and poultry care, disease prevention and treatment and similar agricultural problems. May be designated according to type of products sold; for example,
Salesman, Farm Machinery
Salesman, Milking Machines

Salesman, Feed Products
Salesman, Poultry Equipment and Supplies

5131-126 TECHNICAL SALESMAN, CONSTRUCTION EQUIPMENT AND SUPPLIES (whole. trade) DPT:158

GED: 5 SVP: 7 EC: I PA: L 5 6

Sells building and construction equipment and supplies; such as, concrete, lumber and metal products, roofing material, plumbing fixtures, and heating and air-conditioning equipment to industrial, commercial and residential contractors and construction firms:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling building and construction equipment and supplies.

May be designated according to product sold; for example,
Salesman, Concrete Products Salesman, Lumber
Salesman, Insulation Salesman, Metal Culverts

5131-130 TECHNICAL SALESMAN, ELECTRONIC EQUIPMENT (whole. trade) DPT:158

GED: 5 SVP: 7 EC: I PA: L 5 6

Sells electronic communication, navigation, inspection and production control equipment and parts to industrial, commercial and institutional users:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling electronic equipment.

May lease equipment or sell electronic equipment services. May be designated according to type of equipment sold; for example,
Salesman, Broadcasting Equipment
Salesman, Communication Equipment
Salesman, Radar
Salesman, Ultrasonic Equipment
Salesman, X-Ray Equipment

5131-134 TECHNICAL SALESMAN, INDUSTRIAL MACHINERY AND EQUIPMENT (whole. trade) DPT:158

GED: 5 SVP: 7 EC: I PA: L 5 6

Sells industrial machinery and equipment to processing, fabricating, repairing and other industrial and commercial firms:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling industrial machinery and equipment.

May be designated according to industry in which products are used or according to purpose of equipment; for example,
Salesman, Lubricating Equipment
Salesman, Material-Handling Equipment
Salesman, Textile Machinery
Salesman, Welding Equipment

5131-138 TECHNICAL SALESMAN, MEDICAL-DENTAL EQUIPMENT AND SUPPLIES (whole. trade) DPT:158

GED: 5 SVP: 7 EC: I PA: L 5 6

Sells medical, dental and veterinary equipment and supplies to doctors, dentists, veterinarians and representatives of hospitals, medical schools and similar institutions:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling medical, dental and veterinary equipment and supplies.

May be designated according to type of products sold; for example,
Salesman, Dental Equipment and Supplies
Salesman, Medical Equipment and Supplies
Salesman, Veterinary Equipment and Supplies

5131-142 TECHNICAL SALESMAN, RAILROAD EQUIPMENT AND SUPPLIES (whole. trade) DPT:158

GED: 5 SVP: 7 EC: I PA: L 5 6

Sells railroad equipment and supplies, such as rolling stock, vehicle components and track and maintenance-of-way machinery and equipment:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMAN AND RELATED ADVISERS. Specializes in selling railroad equipment and supplies.

May be designated according to type of equipment sold; for example, Salesman, Rolling Stock

5131-146 SALES REPRESENTATIVE, LIGHT, HEAT AND POWER (elec. power; utilities, n.e.c.) DPT:258

GED: 4 SVP: 6 EC: I PA: L 5 6

Advises existing and prospective commercial and residential clients on use of electricity, natural gas, or steam and related lighting, heating and power equipment to promote increased use of power or fuel:

Studies plans of new construction and inspects existing installations to determine requirements of initial service or extension of present service. Quotes approximate rates, installation charges and operating costs, and explains services offered by company. Writes installation requisitions and service applications and forwards them to other departments for action. Provides advice on safe, efficient and economic use of lighting, heating and power equipment for commercial or residential consumers. Investigates customer complaints concerning abnormal bills, property damage or faulty service.

May solicit consumers in areas of prospective development. May inspect installations for conformance to industry safety standards. May be designated according to type of utility or customer; for example,

Commercial-Sales Representative
Electric-Service Adviser (elec. power)
Heating Adviser
Residential-Service Representative

5131-150 TECHNICAL SALESMAN, CHEMICALS (whole. trade) DPT:358

GED: 4 SVP: 6 EC: I PA: L 5 6

Sells explosives, acids, and industrial and agricultural chemicals and chemical products:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling chemicals and chemical products.

May sell particular type of chemical or chemical product and be designated accordingly.

5131-154 TECHNICAL SALESMAN, METALS (whole. trade) DPT:358

GED: 4 SVP: 6 EC: I PA: L 5 6

Sells non-fabricated metals; such as, brass, copper, iron and steel, utilizing knowledge of metallurgy and applications of various metals:

Performs duties described in the definition for Unit Group 5131, TECHNICAL SALESMEN AND RELATED ADVISERS. Specializes in selling non-fabricated metals.

5131-199 OTHER TECHNICAL SALESMEN AND RELATED ADVISERS

This group includes salesmen of commodities, not elsewhere classified; for example, those who sell structures, such as buildings, bridges or pipelines.

5133-COMMERCIAL TRAVELLERS

This unit group includes occupations concerned with selling commodities on a wholesale basis in an allotted geographical area to wholesale, retail, industrial, professional

or other establishments. Duties include: soliciting orders from established clientele and attempting to secure new customers; showing samples or catalogue illustrations of products to prospective buyers, and explaining their merit; quoting prices, and credit and discount terms; arranging delivery schedules; processing orders to office or warehouse; resolving customer complaints; and keeping abreast of the latest market conditions, product innovations and price changes.

5133-110 MANUFACTURERS' AGENT (whole. trade) DPT:158
manufacturers' representative.
 GED: 4 SVP: 7 EC: 1 PA: L 5 6

Sells single, allied, diversified or multi-line products, on commission basis, to wholesale, retail and other establishments for one or more foreign or domestic manufacturers:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling products as agent for manufacturing companies. Visits manufacturers to persuade them to sell their products through his services. Co-ordinates sales program for products handled.
 May prepare advertising brochures and other literature. May be designated according to type of products sold; for example, Food Broker

5133-114 PHARMACEUTICAL REPRESENTATIVE (whole. trade) DPT:358
pharmaceutical-detail man; salesman, drug supplies.
 GED: 4 SVP: 7 EC: 1 PA: L 5 6

Promotes and sells drugs and other pharmaceutical products to physicians, dentists, hospitals and wholesale and retail drug establishments:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling pharmaceutical products. Informs customers of new drugs and explains characteristics and clinical studies conducted with drug. Discusses dosage, use and effects of new drugs and medical preparations. Distributes samples to customers.

5133-118 SALES REPRESENTATIVE, TEXTBOOKS (print. & pub.; whole. trade) DPT:358
publisher's representative.
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Promotes sale of textbooks to educational institutions, such as elementary and secondary schools, technical institutes, and universities:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling textbooks. Reviews courses of study approved by educational institutions to determine textbook requirements. Consults with educational authorities on content of courses and provides advice on publications available to meet their needs. Presents sample textbooks to educational authorities for approval and explains their features and advantages. Confers with publishing department to plan and co-ordinate publication of textbooks.
 May investigate possibilities of sources of publication of new textbooks.

5133-122 SALES REPRESENTATIVE, CANVAS PRODUCTS (whole. trade) DPT:358
 GED: 4 SVP: 6 EC: B PA: L 5 6

Sells canvas products; such as, awnings, tents, tarpaulins, covers and bags:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling canvas products.
 May rent tents or awnings for outdoor events. May deliver and install awnings.

5133-126 SALES REPRESENTATIVE, COMMERCIAL AND INDUSTRIAL EQUIPMENT AND SUPPLIES (whole. trade) DPT:358
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells small machines, tools, precision instruments, parts, furniture and other commercial and industrial equipment and supplies used in production of goods or services:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling commercial and industrial equipment and supplies.
 May deliver items sold. May be designated according to type of products sold; for example,
 Salesman, Engineering Supplies Salesman, Office Machines
 Salesman, Hotel and Restaurant Equipment Salesman, Printing Supplies
 Salesman, Office Furniture Salesman, Safety Equipment

5133-130 SALES REPRESENTATIVE, FOOD PRODUCTS (whole. trade) DPT:358
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells food products, such as produce, canned goods and meats, to retail and wholesale food stores, restaurants and institutions:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling food products. Advises customers on product usage, pricing and display.
 May also sell sundry items such as smoking supplies, toiletries and household goods. May be designated according to kind of food product sold; for example,
 Salesman, Groceries Salesman, Meats

5133-134 SALES REPRESENTATIVE, GARMENTS AND OTHER TEXTILE PRODUCTS (whole. trade) DPT:358
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells garments, yard goods and other textile products to wholesale and retail outlets, applying knowledge of garment construction, fabrics, styles and prices:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling garments and other textile products.

5133-138 SALES REPRESENTATIVE, MOTOR VEHICLES AND EQUIPMENT (whole. trade) DPT:358
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells motor vehicles, parts and accessories to dealers, garages and other sales outlets:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling motor vehicles and equipment. Advises dealers in sales promotion techniques. Confers with dealer and reviews sales records to determine number of motor vehicles to order.
 May sell motor vehicle parts and accessories only and be designated accordingly; for example,
 Salesman, Automobile Parts

5133-142 SALES REPRESENTATIVE, PETROLEUM PRODUCTS (whole. trade) DPT:358
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells gasoline, oil, grease, lubricants and other petroleum products to retail dealers and distributors and to industrial and commercial consumers:
 Performs duties described in the definition for Unit Group 5133, **COMMERCIAL TRAVELLERS**. Specializes in selling petroleum products. Recruits retail dealers, agents and distributors to market company's products and completes leasing arrangements for sales outlets.

5133-146 SALES REPRESENTATIVE, PLASTIC PRODUCTS (whole. trade) DPT:358
GED: 4 SVP: 6 EC: I PA: L 5 6

Sells plastic products and plastic construction materials, such as boxes, sheets, tubes and rods:
Performs duties described in the definition for Unit Group 5133, COMMERCIAL TRAVELLERS. Specializes in selling plastic products and materials.
May assist in preparation of designs and specifications for construction materials. May sell materials used in manufacture of fiberglass products.

5133-150 SALES REPRESENTATIVE, PULP AND PAPER PRODUCTS (whole. trade) DPT:358
GED: 4 SVP: 6 EC: I PA: L 5 6

Sells pulp, paper and paper products; such as, bags, containers, stationery and wrapping paper:
Performs duties described in the definition for Unit Group 5133, COMMERCIAL TRAVELLERS. Specializes in selling pulp, paper and paper products.
May be designated according to product sold; for example,
Salesman, Corrugated Containers Salesman, Paper Bags
Salesman, Newsprint Salesman, Pulp

5133-154 SALES REPRESENTATIVE, RUBBER PRODUCTS (whole. trade) DPT:358
GED: 4 SVP: 6 EC: I PA: L 5 6

Sells rubber products; such as, gaskets, hoses, belts and clothing:
Performs duties described in the definition for Unit Group 5133, COMMERCIAL TRAVELLERS. Specializes in selling rubber products.

5133-158 CONTACT MAN, RECORDINGS (whole. trade) DPT:358
record pusher.
GED: 4 SVP: 5 EC: I PA: L 5 6

Promotes and sells phonograph records and tapes:
Performs duties described in the definition for Unit Group 5133, COMMERCIAL TRAVELLERS. Specializes in selling records and tapes to wholesale and retail dealers. Contacts radio and TV broadcasting stations by telephone, letter and in person to persuade them to play records of artists and groups under contract to record company.

5133-162 SALES REPRESENTATIVE, PUBLICATIONS (whole. trade) DPT: 358
distributor, publications.
GED: 4 SVP: 5 EC: I PA: L 5 6

Sells publications; such as, hard- and soft- cover books, magazines, comics and other periodicals to newsstands, hotels, motels and retail stores:
Performs duties described in the definition for Unit Group 5133, COMMERCIAL TRAVELLERS. Specializes in selling publications.
May deliver publications to purchaser. May collect excess copies for redistribution to other retail outlets.

5133-166 SALES REPRESENTATIVE, TOBACCO PRODUCTS AND SMOKING SUPPLIES (whole. trade) DPT:358
GED: 4 SVP: 5 EC: I PA: L 4 5 6

Sells tobacco products; such as, cigars, cigarettes and pipe tobacco, and smoking supplies; such as, pipes, tobacco pouches, and lighters:
Performs duties described in the definition for Unit Group 5133, COMMERCIAL TRAVELLERS. Specializes in selling tobacco products and smoking supplies.
May deliver products to replenish dealers' stocks.

5133-199 OTHER COMMERCIAL TRAVELLERS

This group includes commercial travellers, not elsewhere classified; for example, those who sell agricultural produce, novelties, toiletries, fuels, and vending machines on a wholesale basis. Typical examples of occupational titles covered by this residual group definition are:
Salesman, Novelties (whole. trade)
Salesman, Vending Machines (whole. trade)

5135-SALESMEN AND SALESPERSONS, COMMODITIES, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with selling commodities in wholesale and retail trade establishments by performing duties as described under the master title, 01-230 SALESMAN (ret. trade; whole. trade), or under the master title, 01-240 SALESPERSON (ret. trade; whole. trade).

5135-110 SALESMAN, MOTOR VEHICLES (ret. trade) DPT:353
GED: 4 SVP: 6 EC: B PA: L 4 5 6

Sells new or used motor vehicles, such as automobiles, trucks or motorcycles:
Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling motor vehicles.
May be designated according to type of motor vehicle sold; for example,
New-Car Salesman Truck Salesman
Salesman, Motorcycle Used-Car Salesman

5135-114 SALESMAN, SEWING MACHINES (ret. trade; whole. trade) DPT:354
serviceman-salesman, sewing machines.
GED: 4 SVP: 6 EC: I PA: M 4 5 6

Demonstrates, sells and services household and commercial sewing machines:
Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling and servicing domestic and commercial sewing machines. Delivers sewing machine to customer. Lubricates, adjusts and repairs machines in home or business establishment, using hand tools.

5135-118 SALESMAN, HEARING AIDS (ret. trade) DPT:354
hearing-aid consultant.
GED: 4 SVP: 6 EC: I PA: L 4 5 6 7

Sells and fits hearing aids:
Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling hearing aids. Measures customer's hearing ability with audiometer when customer has not been referred by doctor. Inserts impression material in customer's ear to form mould for earpiece. Fits hearing aid on customer and gives instructions regarding its use. Replaces defective parts and makes minor adjustments to faulty equipment.

5135-120 SALESMAN, LIVESTOCK (whole. trade) DPT:357
commission agent, livestock
GED: 4 SVP: 6 EC: B PA: L 5 6 7

Sells livestock at stockyards, as agent for owner, to packing houses, farmers or other purchasers:
Receives and classifies livestock according to factors; such as, weight, sex, age and appearance, to facilitate sale. Contacts purchasing agents and informs them of livestock available for sale, quality of livestock and market conditions. Shows livestock to buyers and points out good features to persuade them to make purchases. Sells livestock to highest bidder. Classifies livestock according to owner, size and quality, using coloured markings and brands as identification. Staples serial-numbered tag to ear of animal. Records sale price and name of buyer

of each animal on alley card to facilitate accounting. Attends livestock meetings and exhibitions to keep informed of livestock trends and market conditions.

May weigh livestock and record weight on alley card to provide data for accounting and payment purposes. May specialize in selling one species of livestock and be designated accordingly; for example,

Salesman, Cattle

Salesman, Hogs

Salesman, Sheep

5135-122 SALESMAN, MUSICAL INSTRUMENTS AND SUPPLIES (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 6 EC: 1 PA: L 4 5 6

Sells pianos, organs, brass, stringed, woodwind and percussion instruments and supplies, such as parts, accessories and sheet music:

Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling musical instruments and supplies, utilizing musical skills and knowledge.

May appraise used instruments for trade-in value. May sell related musical commodities, such as radios, hi-fi equipment and recordings.

5135-126 SALESPERSON, PARTS (ret. trade; whole. trade) DPT:357

counterman, parts; parts clerk.

GED: 4 SVP: 6 EC: 1 PA: L 4 5 6

Sells spare and replacement parts for motor vehicles, appliances, machinery and equipment, from behind counter in agency, repair shop or parts store:

Performs duties as described under master title, 01-240 SALESPERSON (ret. trade; whole. trade). Specializes in selling parts. Orders, receives and stores parts in stockroom according to prearranged system. Reads catalogue to determine stock number and price of part sold.

May examine article to determine parts required. May accept used parts as exchange for new ones. May be designated according to type of parts sold; for example,

Counterman, Automotive Parts

5135-130 SALESMAN, BOATS AND MARINE EQUIPMENT (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: B PA: L 4 5 6

Sells boats and marine equipment and supplies; such as, motors, running lights, rope and boat accessories:

Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling boats and marine equipment.

May demonstrate boat in water. May attend to delivery, registration and inspection of boat. May act as broker to sell boats for customers.

5135-134 SALESMAN, DRAPERY AND UPHOLSTERY (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells custom- or ready-made draperies, slipcovers and furniture upholstery:

Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling draperies and upholstery. Estimates amount of fabric required by measuring area or studying plans, and computes cost of material and labour.

May draw sketches of proposed work. May estimate costs of repairing and upholstering furniture. May be designated according to type of item sold; for example,

Salesman, Custom Drapery

Salesman, Upholstery and Furniture Repair

5135-138 SALESMAN, FLOOR COVERINGS (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells rugs, carpets, linoleum and other floor coverings to homes and business establishments:

Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling floor coverings. Estimates amount of covering needed from floor plans, or measures customer's floor area, using tape measure. Cuts carpet or sheet floor-covering with knife or shears to fill customer's order.

5135-142 SALESMAN, FURNITURE AND APPLIANCES (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells household furniture and appliances; such as, sofas, tables, beds, refrigerators, ranges, clothes driers and vacuum cleaners:

Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling household furniture and appliances. Dusts or vacuums furniture as required.

May uncrate material, using hand tools, and arrange items on sales floor. May be designated according to type of commodities sold; for example,

Salesman, Appliances

Salesman, Audio Equipment

Salesman, Furniture

Salesman, Television

5135-146 SALESMAN, HOUSE TRAILERS (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 5 6

Sells mobile homes, travel trailers, truck campers and related accessories and equipment:

Performs duties as described under master title, 01-230 SALESMAN (ret. trade; whole. trade). Specializes in selling house trailers and campers. Arranges transportation of mobile home to customer's lot or trailer park and connection of utilities.

May arrange financing and insurance. May be designated according to type of trailer sold; for example,

Salesman, Mobile Homes

5135-150 SALESPERSON, BOOKS (ret. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells hard-and soft-cover books and magazines in book or department store:

Performs duties as described under master title, 01-240 SALESPERSON (ret. trade; whole. trade). Specializes in selling books. Suggests selection of books to customer, based on knowledge of current literature and familiarity with publishers' catalogues and book reviews. Orders out-of-stock books at customer's request.

May sell related articles, such as stationery and art supplies.

5135-154 SALESPERSON, HARDWARE (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells hardware; such as, power tools, hand tools, electrical and plumbing supplies, paints, and lawn and gardening equipment and supplies:

Performs duties as described under master title, 01-240 SALESPERSON (ret. trade; whole. trade). Specializes in selling hardware. Estimates amounts of material required by customer, mixes paints, and cuts wire, screen and glass to size. Advises customer on building, gardening and home repair problems.

May be designated according to type of hardware sold; for example,

Salesperson, Lawn and Garden Supplies

Salesperson, Paints

5135-158 SALESPERSON, JEWELLERY AND RELATED PRODUCTS (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells jewellery and related products, such as watches, silverware and china:

Performs duties as described under master title, 01-240 SALESPERSON (ret. trade; whole. trade). Specializes in selling jewellery and related products.

May suggest designs for custom-made jewellery. May receive watches

for repair or make minor repairs to watches. May be designated according to commodity sold; for example,
Salesperson, China and Glassware
Salesperson, Watches
Salesperson, Silverware

5135-162 SALESPERSON, PETS AND PET SUPPLIES (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells pets; such as, animals, birds and fish, and pet supplies; such as, tanks, cages and feeds:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling pets and pet supplies. Feeds, waters and provides care for pets prior to sale. Suggests remedies for animal diseases or recommends veterinary attention.

5135-166 SALESPERSON, PHOTOGRAPHIC EQUIPMENT AND SUPPLIES (ret. trade; whole. trade) DPT:357
salesperson, camera equipment.
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells photographic and optical equipment and supplies; such as, cameras, projectors, film and binoculars:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling photographic equipment and supplies. Receives film for developing and printing and returns processed film. Makes minor repairs and adjustments to equipment.

5135-170 SALESPERSON, SPORTING GOODS (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells sporting goods used for hunting, fishing, camping, skiing, golfing and other athletic activities:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling sporting goods. Registers sales of handguns. Explains local fish and game laws and informs customer of hunting, fishing and skiing areas.

5135-174 SALESPERSON, SURGICAL APPLIANCES (ret. trade; whole. trade) DPT:357
fitter, surgical appliances.
GED: 4 SVP: 5 EC: 1 PA: L 3 4 5 6

Fits and sells surgical and orthopedic appliances; such as, trusses, abdominal supports, custom shoes, braces, and artificial limbs:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in examining malformed or injured joints and bone structure, and measuring, selecting and fitting appliance on customer. Writes specifications or follows prescription of physician to order custom-made appliances. Examines appliance on customer's body to verify corrective support. May design and fabricate or direct fabrication of custom-made appliances. May fit appliance in customer's home or in hospital.

5135-178 SALESPERSON, WEARING APPAREL (ret. trade; whole. trade) DPT:357
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Sells clothing, such as suits, dresses and shirts, and accessories, such as hats, belts, ties, and scarves:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling wearing apparel. Advises customer on fashions and suitable styles. Measures customer, with tape measure, and selects appropriate size of garment. Fits garment on customer and marks alterations with chalk or pins, or calls tailor to fit garment. May take and record customer's measurements to order made-to-measure garments. May be designated according to type of wearing apparel sold; for example,

Salesperson, Children's Wear Salesperson, Men's and Boy's Clothing
Salesperson, Foundation Garments Salesperson, Millinery
Salesperson, Furs Salesperson, Women's Apparel

5135-182 SALESPERSON, FOOTWEAR (ret. trade) DPT:357
salesperson, shoes.
GED: 3 SVP: 5 EC: 1 PA: L 3 4 5 6

Sells shoes, boots and other footwear:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling footwear. Measures customer's foot on special device or asks customer to determine shoe size. Obtains footwear of specified style, colour and size from stock and fits onto customer's foot. May stretch shoes, using stretching device. May insert pads in heel or instep of shoe.

5135-186 SALESPERSON, AUTOMOBILE ACCESSORIES (ret. trade; whole. trade) DPT:357
GED: 3 SVP: 4 EC: 1 PA: L 4 5 6

Sells automobile accessories; such as, tires, batteries, seat covers, headlights and racing equipment, in auto supply, hardware or department store:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling automobile accessories. May install accessories sold.

5135-190 SALESPERSON, HOUSEWARES (ret. trade) DPT:357
GED: 3 SVP: 4 EC: 1 PA: L 4 5 6

Sells housewares; such as, china, glassware, flatware, kitchen utensils, brooms, mops and small appliances:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling housewares.

5135-194 SALESPERSON, YARD GOODS (ret. trade) DPT:357
salesperson, fabrics.
GED: 3 SVP: 4 EC: 1 PA: L 4 5 6

Sells yard goods made from cotton, linen, wool, silk and synthetic fibers, and related supplies, such as thread, zippers and patterns:
Performs duties as described under master title, 01-240
SALESPERSON (ret. trade; whole. trade). Specializes in selling yard goods and related products. Measures and cuts length of fabric from bolt, using yardstick and scissors.

5135-199 OTHER SALESMEN AND SALESPERSONS, COMMODITIES

This group includes salesmen and salespersons, commodities, not elsewhere classified; for example, those who sell burial plots and memorials, cosmetics, linens and beddings or toys. Typical examples of occupational titles covered by this residual group definition are:
Salesman, Memorials (ret. trade)
Salesperson, Cosmetics (ret. trade)

5137-SALES CLERKS, COMMODITIES

This unit group includes occupations concerned with selling commodities, usually in retail trade establishments, for which a knowledge of the item sold is not a primary requirement; stocking shelves with merchandise; wrapping and packing customer's purchases; receiving payment for goods and making change; and keeping records of sales.

5137-110 COUPON-REDEMPTION CLERK (ret. trade) DPT:477
GED: 2 SVP: 2 EC: 1 PA: M 4 5 6 7

Redeems books of trading stamps or coupons in exchange for merchandise and vacation trips:
Shows customer selection of merchandise in display catalogue and aids customer to make selection of merchandise. Counts coupon books and verifies number of coupons or trading stamps required for requested articles. Orders or obtains merchandise from stockroom. Answers inquiries over telephone regarding merchandise, and arranges for shipment to homes or stores.
May exchange coupon books for cash. May keep record of books redeemed and merchandise distributed. May take inventory of stock. May arrange displays of merchandise on counters, racks, shelves or stands, and wrap items.

5137-114 SALES CLERK (ret. trade) DPT:477
store clerk.
GED: 2 SVP: 2 EC: 1 PA: L 4 5 6

Performs any combination of the following duties in retail sales establishment:
Obtains articles for customer from counter, shelf or stockroom; or directs customer to location of article sought, to fitting rooms or to cashier. Writes sales check for items purchased, receives payment or prepares charge slips. Bags or wraps merchandise and hands package to customer or routes it to delivery department. Keeps record of items sold. Stocks shelves, counters and display areas with merchandise and keeps stock in order. Maintains inventory of merchandise and orders stock from warehouse or stockroom. Prices articles, using stamp, stickers and price list. Prepares and distributes samples of merchandise.
May be designated according to duties performed, area of work, or merchandise sold; for example,
Bakery Girl Meat Counterman
Clerk, Tobacco Products Newsstand Clerk
Drug-Store Clerk Produce-Department Clerk
Grocery-Store Clerk

5141-STREET VENDORS and DOOR-TO-DOOR SALESMEN

This unit group includes occupations concerned with selling products, such as fruit and vegetables, or soliciting orders on street or from door to door.

5141-110 DOOR-TO-DOOR SALESMAN (ret. trade) DPT:358
canvasser; solicitor.
GED: 3 SVP: 2 EC: B PA: L 5 6

Sells books, magazines, notions and other merchandise, going from door to door:
Displays sample products or catalogue and explains desirable qualities of product. Writes orders, delivers goods and receives payment, or passes orders to other department for processing.
May develop lists of prospective customers or follow leads supplied by management. May distribute advertising literature and leave samples. May be designated according to product sold; for example,
Magazine-Subscription Solicitor Representative, Household Products Representative, Beauty Products Salesman, Encyclopedia

5141-114 STREET VENDOR (ret. trade) DPT:457
pedlar; street hawker.
GED: 2 SVP: 2 EC: O PA: M 4 5 6

Peddles goods, such as fruit, vegetables, or ice cream, on street:
Loads goods into basket, push-cart or truck and transports them to street location or from house to house. Hands goods to customer, receives payment and makes change as necessary.
May attract customers by ringing bell, playing recorded music,

chanting song or calling out information. May be designated according to product sold; for example,
Fish Monger Ice-Cream Vendor
Fruit Pedlar Popcorn Vendor

5143-NEWSBOYS

This unit group includes occupations concerned with delivering newspapers to regular subscribers and collecting money, or selling newspapers on streets or from newspaper stands.

5143-110 NEWSPAPER CARRIER (ret. trade) DPT:457
carrier; paper boy.
GED: 1 SVP: 2 EC: O PA: M 4 5 6

Delivers newspapers to subscribers on established route:
Obtains newspapers from circulation department or at drop point and counts them to ensure that correct number has been supplied. Walks or rides bicycle to deliver newspapers to subscribers on assigned route. Collects payment, makes change and issues receipts for subscription on weekly, bi-weekly or monthly basis. Visits prospective customers on route to solicit new subscriptions. Maintains record of deliveries made and payments collected.

5143-114 NEWSVENDOR (ret. trade) DPT:457
newsboy, street sales; newspaper vendor.
GED: 1 SVP: 1 EC: O PA: L 4 5

Sells newspapers to customers at street location:
Obtains newspapers from circulation department or drop point and carries to sales location. Displays newspapers and calls out to attract passers-by. Receives payment for newspaper sold and makes change. Returns unsold newspapers to supplier and pays for newspapers sold.
May sell newspapers from street stand.

5145-SERVICE STATION ATTENDANTS

This unit group includes occupations concerned with selling fuel, lubricants, and miscellaneous automotive products to customers of a gasoline service station, and performing such services as cleaning, lubricating and minor repairs to motor vehicles.

5145-110 SERVICE-STATION ATTENDANT (motor vehicle; ret. trade) DPT:677
filling-station attendant; pumpman.
GED: 2 SVP: 3 EC: B 7 PA: M 3 4 5 6

Sells fuel, lubricants and miscellaneous automotive accessories, and services motor vehicles at retail gasoline service station:
Fills vehicle fuel tank with gasoline or diesel fuel to level specified by customer. Measures level of oil in crankcase, using dipstick, checks level of water in radiator and battery, and measures air pressure in tires, using gauge. Adds required amounts of oil, water and air. Washes windshield and other windows of vehicle. Lubricates vehicle and changes motor oil, installs antifreeze and replaces parts; such as, lights, oil filter, windshield-wiper blades and fan belt. Repairs or replaces tires. Sells batteries, tires, car washing materials and other automotive supplies. Collects cash payment for services and supplies, or completes credit card sales form.
May work at gasoline bar, selling fuel, lubricants, and accessories, without performing service duties, and be designated accordingly; for example,
Gas-Bar Attendant (ret. trade)

5149-SALES OCCUPATIONS, COMMODITIES, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with selling commodities, such as those who sell cigarettes and novelties in night clubs, and programs and refreshments at fairs, or sports and other recreational events. Auctioneers and related workers are in this unit group.

5149-110 AUCTIONEER (ret. trade; whole. trade) DPT:258
GED: 3 SVP: 6 EC: I PA: L 5 6 7

Sells property or merchandise; such as, real estate, furniture, livestock, machinery and art objects, at auction:

Appraises merchandise before sale and assembles merchandise in lots according to estimated value of individual pieces. Selects articles to be auctioned at suggestion of bidders or by own choice. Describes item and asks for or states starting price. Requests bids, observes buyers' signals, stimulates competitive bidding and repeats bids offered. Closes sale to highest bidder.

May maintain record of bids received, name of buyer, and selling price. May make inventories of goods for sale and issue catalogues. May specialize in selling particular kinds of goods or property and be designated accordingly.

5149-114 VENDOR (ret. trade) DPT:457
GED: 2 SVP: 2 EC: B PA: M 4 5 6

Sells refreshments, programs, cushions or novelties at places of entertainment:

Circulates among patrons, carrying items for sale, and calls out articles. Hands, passes or throws article to purchaser. Receives payment and makes change as necessary.

May be designated according to article sold; for example,
Hot-Dog Vendor Program Seller

5149-118 TOBACCO-AUCTION-ROOM ATTENDANT (whole. trade) DPT:567
clock operator, tobacco auction; dutch-clock operator.

GED: 2 SVP: 1 EC: I PA: S 4 5

Starts clock that registers bid prices for each lot of tobacco sold at tobacco auction:

Calls out number and grade of lot of tobacco offered for sale. Pushes buttons on console to show on clock starting price specified by auction officials. Moves lever to start sweep hand of clock rotating. Repeats actions for each lot of tobacco to be sold. Records bid prices, grade, weight and bidder's name for each lot of tobacco sold.

May announce bid prices, using public address system.

5149-199 OTHER SALES OCCUPATIONS, COMMODITIES

This group includes sales workers, commodities, not elsewhere classified; for example, those who sell cigarettes and other items to patrons in a night club. A typical example of an occupational title covered by this residual group definition is:

Cigarette Girl (cater. & lodg.)

517-SALES OCCUPATIONS, SERVICES

This minor group includes occupations concerned with conducting businesses which sell services; such as, insurance, real estate, securities, and advertising, on own or owners' behalf or in partnership; supervising and co-ordinating activities of workers directly and indirectly engaged in selling services; selling life, endowment, fire, accident and other types of insurance; selling and leasing real estate property; such as, building lots, houses, apartments and estates; buying and selling securities, such as stocks and bonds; and selling advertising and business services; such as, credit information, address listing, debt collecting, burglary, fire and other protection, cleaning and other business services. Sales managers are in Unit Group 1137, SALES AND ADVERTISING MANAGEMENT OCCUPATIONS. SALES OCCUPATIONS, SERVICES are classified in the following unit groups:

- 5170** Supervisors: Sales Occupations, Services
- 5171** Insurance Salesmen and Agents
- 5172** Real Estate Salesmen
- 5173** Salesmen and Traders, Securities
- 5174** Advertising Salesmen
- 5177** Business Services Salesmen
- 5179** Sales Occupations: Services, n.e.c.

5170-SUPERVISORS: SALES OCCUPATIONS, SERVICES

This unit group includes occupations as described under the master titles, 01-180 MANAGING SUPERVISOR (any ind.) and 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with conducting businesses, on own or owners' behalf or in partnership, selling services; such as, insurance, securities, real estate and advertising; or supervising and co-ordinating the activities of workers engaged in selling services.

5170-110 INVESTMENT BROKER (bank. & finance) DPT:118
broker-dealer; investment dealer.
GED: 5 SVP: 8 EC: I PA: S 5 6

Plans, organizes, directs and controls the operation of a brokerage firm concerned with buying and selling stocks and bonds to customers, on a commission basis:

Performs duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.). Advises potential purchasers regarding stocks, bonds, market conditions, and history and prospects of organization in which investment is contemplated. Negotiates with insurance companies and mutual fund and pension fund managements to obtain supply of money for short-term loans. Directs

negotiations to buy customers' securities, or sell securities to customers from firm's inventory.
May perform duties of 5173-110 SECURITIES TRADER (bank. & finance).

5170-114 MUTUAL-FUND BROKER (bank. & finance) DPT:138
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls the operations of a brokerage concerned with the sale of mutual funds;
Performs duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.). Consults with mutual fund management to obtain contracts to sell mutual fund shares. Co-ordinates sales activities by organizing and conducting meetings, assigning territories to salesmen, reviewing and approving sales contract applications, and recommending adjustments. Prepares and arranges for the distribution of promotional material. Supervises clerical staff engaged in processing contracts, dividends, payments, and commissions.
May negotiate with investment dealers to promote sale of fund shares at discount prices for public resale through dealers' sales organization.
May organize and supervise the sale of scholarship funds.

5170-118 GRAIN BROKER (bank. & finance) DPT:138
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Directs activities of grain traders who buy and sell grain or grain futures on commission according to customer's order, through commodities exchange;
Performs duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.). Formulates policy of brokerage firm and informs and directs staff to advise customers concerning changes and other factors which may affect them; such as, crop carryover, present and proposed government policies, normal grain production and consumption, foreign and domestic crop conditions, and price differentials between various kinds of grain. Ensures that grain traders notify customers when additional margin is required because of price fluctuations, exchange and governmental regulations, and firm's policy.
May direct activities of grain traders who specialize in buying and selling grain futures for customers, or brokerage firms without floor-trading rights.

5170-120 SUPERVISOR, ADVERTISING SALESMEN (bus. serv.) DPT:138
GED: 5 SVP: 7 EC: 1 PA: S 5 6 Supervises and co-

ordinates activities of workers concerned with sale of display and classified advertising for a publication (Unit Group 5174);
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Plans sales campaigns. Assigns sales areas, or list of customers or prospects to be contacted by advertising salesmen. Checks individual sales records to determine amount of advertising sold, frequency of customer contacts, and development of new accounts. Consults with department heads and other officials to plan special campaigns and to promote sale of advertising to various industry or trade groups. Prepares sales progress charts by area, type of industry, or trade classification. Corresponds with customers relative to advertising rates and policies, or to solicit new business.

5170-122 SUPERVISOR, LIFE INSURANCE SALESMEN (insur. & real estate) DPT:138
district supervisor, insurance office.
GED: 5 SVP: 7 EC: 1 PA: S 5 6

Supervises and co-ordinates activities of agents engaged in selling all types of life insurance (Unit Group 5171);
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Attends seminars on management and sales promotion, to keep abreast of new techniques. Interviews special clients and assists agents to complete difficult sales by suggesting alternate programs. Consults with company officials to plan methods of increasing sales, through advertising and by motivating agents to increase customer contacts. Reviews sales reports to ensure that agents have achieved their quota or to reconcile earned commissions with commission advances.

5170-126 MANAGING SUPERVISOR, REAL ESTATE (insur. & real estate) DPT:138
sales manager, real estate.
GED: 4 SVP: 8 EC: 1 PA: S 5 6

Plans, organizes, directs and controls activities of real estate salesmen engaged in buying, selling and leasing property for clients on commission basis (Unit Group 5172);
Performs duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.). Supervises salesmen to ensure ethical real estate practices are maintained throughout all business negotiations and transactions. Prepares and issues instructions and information bulletins on current real estate developments. Analyzes market information and attends seminars and management meetings to keep abreast of new developments in the real estate field. Maintains a register of customer referrals to ensure equal distribution of business to sales personnel. Authorizes all real estate listings for acceptance by company. Prepares weekly sales reports.

5170-199 OTHER SALES SUPERVISORY OCCUPATIONS, SERVICES

This group includes service sales supervisors, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in selling other business services.

5171-INSURANCE SALESMEN AND AGENTS

This unit group includes occupations concerned with selling life, endowment, fire, accident and other types of insurance to clients; and determining whether applicants are good risks. Insurance adjusters are in Unit Group 4192, ADJUSTERS, CLAIM.

5171-110 GROUP-INSURANCE REPRESENTATIVE (insur. & real estate) DPT:258
GED: 5 SVP: 7 EC: 1 PA: S 5 6 Explains group

insurance programs to promote sale of insurance to prospective firms and organizations and establishes bookkeeping system for insurance plan;
Explains, to employers and employees, types of insurance coverage such as health, accident, life or liability, and accounting system involved. Plans and oversees incorporation of insurance program into organization's bookkeeping system. Establishes methods of premium payment.
May install accounting systems and resolve system problems.

5171-114 SALESMAN, LIFE INSURANCE (insur. & real estate) DPT:258
GED: 4 SVP: 7 EC: 1 PA: S 5 6

Solicits and sells all types of life insurance, based on client's present insurance benefits, to establish a plan for future financial security, utilizing knowledge of law, accounting, taxation and estate planning;
Advises client concerning life insurance, pensions, taxation and family finance. Calls on policy holders to keep insurance program up-to-date, to make changes in beneficiaries and to suggest changes or additions to insurance program. Ensures that all forms are completed and arranges medical examination for prospective client. Suggests method of premium payment and settlement option. Delivers policy to client and explains it in detail.

5171-118 SALESMAN, INSURANCE (insur. & real estate) DPT:258
insurance agent.
GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells fire, automobile, marine and other types of insurance to new and existing clients;
Compiles lists of prospective clients from business and social contacts, directories and other sources. Interviews prospective customers, assesses their insurance needs and attempts to sell them suitable

policy. Explains risks covered, benefits paid and other features of policy. Calculates premium rates to be applied for each client, using rate books. Completes application forms and arranges for medical examinations and other policy requirements.

May sell life insurance, if licensed. May collect premiums and keep record of payments. May be designated according to type of insurance sold; for example,

Salesman, Automobile Insurance

Salesman, Fire Insurance

5172-REAL ESTATE SALESMEN

This unit group includes occupations concerned with negotiating, on behalf of clients, the renting, buying and selling and with appraising real property; such as, building lots, houses, apartments and estates; advertising property for rent or sale; and renting space for outdoor advertising.

5172-110 APPRAISER, REAL ESTATE (insur. & real estate) DPT:268
GED: 5 SVP: 8 EC: B PA: S 4 5 6

Appraises improved or unimproved real property to determine its value for purchase, sale, investment, mortgage or loan purposes. Inspects property for construction, condition and functional design and takes measurements. Computes depreciation and replacement costs. Interviews persons familiar with property and considers location and trends or impending changes that could influence future value of property. Searches public records of sales, leases, assessments and other transactions. Compiles data and estimates value of property. Submits report to corroborate value established.

5172-112 RIGHT-OF-WAY AGENT (insur. & real estate) DPT:318
easement clerk
GED: 4 SVP: 6 EC: B PA: L 4 5 6

Negotiates with property owners to secure leases and easements for utility lines, pipelines and other construction projects. Negotiates leases with property owners or obtains easements for permission for construction projects to pass over or under their property. Determines roads, bridges and utility systems that must be maintained during construction. Negotiates for access routes and agreements for restoration of roads and surfaces. Examines public records to determine ownership and property rights, using knowledge of property law.

5172-114 SALESMAN, NEW HOMES (insur. & real estate) DPT:358
GED: 4 SVP: 6 EC: B PA: L 5 6

Sells new homes or new home construction for building contractor. Interviews prospective customers and accompanies them to model homes to display features of construction and quality of workmanship. Reviews plans and specifications with client and architect to clarify costs and construction details in preliminary negotiations for contract. Recommends construction features such as cabinet installations to aid client in formulating plans. Answers questions concerning work under construction. Prepares sales contracts and processes documents to finalize sale. May arrange with utility companies for service connections. May secure construction financing with mortgage company and investigate client's credit status.

5172-118 SALESMAN, REAL ESTATE (insur. & real estate) DPT:358
real-estate agent.
GED: 4 SVP: 6 EC: B PA: L 5 6

Sells and leases land, houses, apartments, commercial buildings and other real estate for clients on commission basis. Studies property listings to become familiar with properties for sale and reviews trade journals to keep informed of marketing conditions and property values. Interviews prospective sellers to solicit listings and advertises properties for sale or lease. Accompanies prospective

purchasers to property sites, points out saleable features of property, quotes asking price and discusses conditions of sale or terms of lease. Draws up sales or rental agreement for approval of purchaser and seller. Assists and advises clients in arrangements for mortgages computation of legal fees and other costs, and related matters.

5172-122 LEASEMAN, SIGNS AND DISPLAYS (insur. & real estate) DPT:358
property-rental man.
GED: 4 SVP: 5 EC: B PA: L 5 7

Persuades property owners to lease land and building for erection of billboard signs used in outdoor advertising:

Tours area in automobile to determine suitable locations for signs. Arranges contracts and draws up leases for land, rooftops or walls. Searches legal records; such as, titles, registry, tax and assessment records for land ownership. Keeps records of rented properties and lease expiry dates.

5173-SALESMEN AND TRADERS, SECURITIES

This unit group includes occupations concerned with buying and selling securities in accordance with customers' wishes; advising and furnishing them with information regarding stocks, bonds, market conditions, and history and prospects of organization in which investment is contemplated.

5173-110 SECURITIES TRADER (bank. & finance) DPT:118
over-the-counter trader.
GED: 5 SVP: 7 EC: I PA: S 5 6

Buys and sells stocks, bonds, currency futures and other securities, both listed and not listed on stock exchange, acting as agent of 5170-110 INVESTMENT BROKER (bank. & finance): Analyzes market conditions and consults with 5170-110 INVESTMENT BROKER (bank. & finance) to establish buying and selling prices of securities in which firm deals. Buys securities from customers and sells securities to customers from firm's inventory. Negotiates with traders of other firms to purchase securities for resale to customer or for firm's inventory.

May negotiate short-term loans with banks, pension funds and insurance companies. May be designated according to type of security traded; for example,
Bond Trader

Money-Market Trader

5173-114 MUTUAL-FUND SALESMAN (bank. & finance) DPT:258
salesman, securities.
GED: 5 SVP: 7 EC: I PA: S 5 6

Buys and sells mutual funds according to customers' wishes, and advises prospective clients on market conditions and history and prospects of various corporations:

Develops portfolio of selected investments for presentation to prospective clients and attempts to persuade them to participate in, fund. Explains features, calculates rates according to plan desired, and draws up sales contract. Maintains files on customers' accounts, including such information as portfolio holdings and credit rating. Transmits buy or sell orders to trading division in accordance with customers' wishes. Informs customers of market fluctuations and of stock purchases and sales affecting their accounts, according to policy formulated by broker.

5173-118 SALESMAN, TRUST SERVICES (bank. & finance) DPT:258
GED: 4 SVP: 7 EC: 1 6 PA: S 5 6

Solicits applications for trust company, from individuals, corporations and commercial establishments for new deposit accounts, security accounts, mutual funds, loans, property management services, group pension plans and estates, consulting and management services: Confers with client to analyze financial position and prepare financial plan which meets his need. Advises individuals in planning will, and counsels them on estate-consulting services available. Controls transfer of securities in security accounts of corporations and commercial establishments to provide registrar services for these establishments. Studies business trends and analyzes financial reports to prepare portfolio of suitable investments for consideration by client. Informs client of other services rendered by trust company. Secures applications from clients for deposit accounts, security accounts, mutual funds, loans, group-pension plans, property management and estates-consulting services. Submits completed applications to appropriate department for further processing. May be designated according to service rendered.

5173-122 BROKER'S FLOOR REPRESENTATIVE (bank. & finance) DPT:268
floor trader.
GED: 4 SVP: 7 EC: 1 5 PA: L 5 6 7

Buys and sells securities on floor of stock exchange, acting as agent for 5170-110 INVESTMENT BROKER (bank. & finance): Observes market activities and trends at assigned area of stock exchange, and informs broker of market conditions which affect firm's policy or holdings. Observes annunciator panel for best prices for clients, and asks stock exchange personnel to inform other floor traders of own intention to buy or sell securities, in accordance with customer's orders. Contacts other floor trader, offering to buy or sell odd-lot or board-lot shares at acceptable prices, and completes details of sale on exchange ticket. Purchases or sells securities at prices set by client. May specialize in trading in odd lots of securities and be designated accordingly; for example, Odd-Lot Trader

5173-126 GRAIN TRADER (bank. & finance) DPT:258
GED: 4 SVP: 6 EC: 1 PA: S 5 6

Buys and sells grain and grain futures, according to customers' orders, through commodities exchange, as agent for 5170-118 GRAIN BROKER (bank. & finance): Assists grain broker to formulate brokerage policy, by compiling charts and analyzing market data and government policies. Executes customers' orders through grain trader located at commodities exchange. Notifies customer of additional margin (downpayment) requirements occasioned by price fluctuations, firm's policy and government regulations. Advises customers on market conditions. May specialize in buying and selling grain or grain futures and be designated accordingly; for example, Cash-Grain Trader Grain-Futures Trader

5174-ADVERTISING SALESMEN

This unit group includes occupations concerned with soliciting business for display or classified advertising in publications or outdoor advertising; selling art work to advertising agencies or industrial firms for use in composing advertising material; and selling advertising time on radio and television programs.

5174-110 SALESMAN, ART (bus. serv.) DPT:258
GED: 4 SVP: 7 EC: 1 PA: L 5 6

Sells page layouts, illustrations, photography and printing plates, to advertising agencies and industrial organizations for use in advertising: Plans layouts to meet customer's needs and writes specifications on order form. Advises customer on methods of composing layouts, utilizing knowledge of photographic and illustrative art and printing

terminology. Informs customer of types of artwork, photography and printing plates available by displaying or providing samples. Computes job costs. Delivers advertising or illustration proofs to customer for approval.

5174-114 SALESMAN, SIGNS AND DISPLAYS (bus. serv.) DPT:258
GED: 4 SVP: 6 EC: 1 PA: S 5 6

Sells signs and advertising displays on billboards: Calls on advertisers, sales promotion personnel and proprietors to obtain information concerning prospects for current advertising and sales promotion and to promote sale of signs and use of billboard displays manufactured by his company. Discusses advantages of and suggests ideas for signs and displays. Submits drawing of proposed sign or display to prospect. Draws up contract covering arrangements for designing, fabricating, erecting, and maintaining sign or display, depending on type of job and customer's wishes. May specialize in sale of signs or billboard displays.

5174-118 SALESMAN, ADVERTISING (bus. serv.) DPT:354
advertising representative.
GED: 4 SVP: 6 EC: 1 PA: L 4 5 6 7

Sells classified and display advertising space for publications: Prepares lists of prospects from leads in other papers and from old or expiring accounts. Visits advertisers and agencies to explain advantages of advertising in the publication. Obtains data to show effectiveness and benefits of current advertising. Prepares sample layouts and writes copy and headings. May originate and develop special advertising campaigns. May be designated according to type of advertising sold; for example, Salesman, Classified Advertising Salesman, Display Advertising

5174-122 SALESMAN, RADIO OR TELEVISION TIME (bus. serv.) DPT:358
GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells radio or television time for broadcasting stations or networks: Visits business and advertising firms and presents outlines of programs or commercial announcements. Discusses popularity of news, sports, variety, dramatic and personality programs, according to audience composition studies. Arranges for and accompanies prospective customer to auditions. Prepares sales contracts. May write advertising copy. May distribute promotional literature and act as public relations man for station.

5177-BUSINESS SERVICES SALESMEN

This unit group includes occupations concerned with selling services; such as, building maintenance, credit reporting, bookkeeping, security, printing and telecommunications to industrial, commercial, institutional, professional and other enterprises.

5177-110 SALE ENGINEER, OIL-WELL SERVICES (oil & nat. gas) DPT:158
GED: 5 SVP: 8 EC: 1 PA: S 5 6

Solicits business for firm providing electrical well logging, directional drilling, side-wall sample taking and other oil-well drilling and production services: Visits owners and managers of crude oil and natural-gas wells to provide technical advice and explain services offered by firm. Confers with engineering and production personnel to analyze well conditions, evaluate and interpret test and survey results, and determine and recommend type of service required. Reports special problems to research staff for development or modification of tools, instruments and methods.

5177-114 SALES REPRESENTATIVE, HOTEL SERVICES (cater. & lodg.) DPT:258
salesman, hotel services.
 GED: 4 SVP: 7 EC: 1 PA: S 5 6

Contacts representatives of government, business, and social groups to solicit business for hotel or resort:
 Selects prospective customers by reviewing information concerning functions; such as, sales meetings, conventions, training classes, and routine travel by organization members. Calls on prospects, analyzes requirements of occasion, outlines types of service offered, and quotes prices. Verifies reservations in person. Confers with customer and hotel-department heads to plan function details; such as, space requirements, publicity, time schedule, food service, and decorations. Serves as convention adviser or hotel agent during function to resolve problems, such as space adjustment and need for additional equipment.

5177-118 SALES REPRESENTATIVE, TELECOMMUNICATIONS (telecom.) DPT:258
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells telecommunications services, such as telephone, teletypewriter and telegraph, to industrial, commercial and institutional customers:
 Consults with customer and company personnel, reviews plans and inspects existing installations to determine communication needs of establishment, utilizing knowledge of type of business, communication traffic patterns and services and equipment available. Recommends installation or expansion of equipment, such as switchboards, telephones, or teletypewriters. Quotes rates, installation charges and operating costs. Prepares and issues service orders for installation of equipment. Investigates customer complaints concerning billing errors or faulty service. Compiles data to evaluate utilization of service and propose areas of expansion.
 May train customers in use of telecommunication equipment. May be designated according to type of telecommunication service sold; for example, Sales Representative, Telephone Service

5177-122 SALESMAN, FREIGHT SERVICE (motor trans.; rail trans.; storage, n.e.c.) DPT:357
crating-and-moving estimator.
 GED: 4 SVP: 6 EC: 1 PA: L 4 5 6

Solicits freight and storage business for railroad or trucking firm:
 Visits homes and business establishments to persuade prospective customers to use company's service. Estimates cost of packing, crating, shipping and storing household goods, machinery, manufactured products and other material. Estimates cubic feet of shipping or storage space required, using comparison chart or electronic measuring device. Advises customers on insurance coverage and arranges pick-up and delivery times.
 May compute liability and insurance costs.

5177-126 MEMBERSHIP PROMOTION OFFICER (misc. serv.) DPT:358
sales representative, trade association.
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Solicits memberships in trade association:
 Visits prospective members to explain benefits of membership and to describe organization and objectives of association. Quotes costs and collects payment for publications, administration and other services.
 May conduct membership meetings.

5177-130 SALESMAN, FINANCIAL SERVICES (bus. serv.) DPT:358
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Sells financial and related services such as credit information, debt collection, auditing and accounting to commercial, industrial and other business establishments:
 Compiles and maintains lists of prospects through social and business contacts, from telephone, business and professional directories, and through observation of business developments. Reviews contracts to seek opportunities for expansion of present business. Visits prospective customers to explain features, benefits and costs of service. Prepares

contracts and schedules initiation of service. Confers with customer and company personnel to resolve complaints.
 May collect payments on accounts. May be designated according to type of financial service sold; for example, Salesman, Collection Agency Sales Representative, Credit Bureau

5177-134 SALESMAN, PRINTING (print. & pub.) DPT:358
 GED: 4 SVP: 6 EC: 1 PA: L 5 6

Solicits business for printing firm:
 Prepares sales promotion letters for prospective customers, following leads from management, established customers and other sources. Visits business establishments and confers with purchasing personnel to describe service, quote prices and explain technical features, such as type size and style, paper stock and reproduction methods. Expedites customer's order through printing processes to resolve delays and other problems.
 May submit formal bids on large orders of printed matter.

5177-138 SALESMAN, MACHINE-VENDING SERVICE (whole. trade) DPT:358
 GED: 4 SVP: 5 EC: 1 PA: L 5 6

Sells machine-vending service for items such as soft drinks, sandwiches, candy, cigarettes or flight insurance to business firms and institutions:
 Visits prospective customer to explain services offered. Compiles market demand data, prepares installation proposals and completes service contract.

5177-142 SALESMAN, ARMoured-CAR SERVICE (bus. serv.) DPT:358
 GED: 3 SVP: 3 EC: 1 PA: L 5 6

Sells armoured-car service to protect business funds and valuables in transit and sells cheque-cashing installations.
 Develops lists of prospective customers from directories and observation of business expansion. Visits business firms to explain types, advantages and costs of armoured-car and cheque-cashing services available. Calculates charges for contracted service based on such factors as amount of liability, frequency of service, truck mileage and number of cheques cashed. Schedules time and place of service. Investigates customer complaints and recommends solutions.

5177-199 OTHER BUSINESS SERVICES SALESMEN

This group includes business services salesmen, not elsewhere classified; for example, those who sell trading stamps, building maintenance or security services. Typical examples of occupational titles covered by this residual group definition are:
 Salesman, Building Maintenance (bus. serv.)
 Salesman, Security Services (bus. serv.)

5179-SALES OCCUPATIONS: SERVICES, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with selling services, such as dance instruction and television cable service.

5179-110 SALESMAN, EDUCATION COURSES (educ.) DPT:358
 GED: 4 SVP: 5 EC: 1 PA: L 5 6

Solicits applications for enrolment in technical, commercial and industrial schools or correspondence courses:
 Advises customers in selecting courses of study based on their educational and vocational objectives. Explains courses offered by school, quotes fees and compiles registration information. Receives registration fees or tuition payments and issues receipts.
 May visit industrial firms to promote sale of training courses for employees.

5179-114 SALESMAN, DANCING INSTRUCTIONS
(educ.) DPT:358
GED: 3 SVP: 5 EC: 1 PA: L 5 6

Sells social and ballroom dancing instructions to customers at dance studio;
Interviews and dances with prospect to ascertain dancing background and ability. Devises plan of instructions and attempts to sell it to customer. Prepares sales contracts and receives payments.
May prepare advertising programs to promote dancing classes.

5179-118 SERVICE REPRESENTATIVE, BUSINESS OFFICE (telecom.) DPT:358
business-office representative.
GED: 3 SVP: 5 EC: 1 PA: S 4 5 6

Performs a variety of duties in business office of telephone company:
Answers customer inquiries and complaints concerning accounts, service or other matters, using telephone or in person. Takes orders for telephone service, recommends types of equipment and services, such as coloured telephones, extensions or unlisted numbers, and quotes installation costs and rental rates. Routes orders to other departments for processing. Arranges for sales representatives to visit customers requiring special or complex communications services. Examines block of customer accounts to detect delinquent payment and mails overdue notices or telephones customers to arrange payment. Maintains records of complaints, inquiries, orders and accounts handled.

5179-122 SALESMAN, TELEVISION-CABLE SERVICE
(telecom.) DPT:358
GED: 3 SVP: 4 EC: 1 PA: L 5 6

Sells community television antenna service or service from cable:
Visits homeowners, apartment owners and building contractors to persuade them to purchase service.
May sell related commodities, such as television sets or apartment intercommunication-security-door systems.

5179-126 COUNTER CLERK (ret. trade) DPT:468
GED: 2 SVP: 3 EC: 1 PA: L 5 6

Receives articles, such as watches, shoes, or clothing to be repaired or cleaned, in retail sales or service establishment:
Quotes price and estimates completion date. Prepares work ticket and sends article to work department. Returns finished articles to customer and receives payment due.
May keep records of cash receipts and articles received and delivered.
May sell items; such as, cleaner, polish, shoelaces and accessories.

5179-199 OTHER SALES OCCUPATIONS, SERVICES

This group includes sales workers in services, not elsewhere classified; for example those concerned with estimating costs of repairs to watches and clocks.

519-OTHER SALES OCCUPATIONS

This minor group includes occupations, not elsewhere classified, concerned with conducting wholesale or retail trade businesses, on own or owners' behalf or in partnership; supervising and co-ordinating activities of workers directly or indirectly engaged in other sales occupations; buying commodities for resale in the wholesale and retail trade; driving vehicles over established routes to deliver and sell bakery and dairy products and to collect and deliver laundry and dry cleaning; selling, renting, and demonstrating goods and services; and appraising commodities. Sales managers are in Unit Group 1137, SALES AND ADVERTISING MANAGEMENT OCCUPATIONS. OTHER SALES OCCUPATIONS are classified in the following unit groups:

- 5190 Supervisors, Other Sales Occupations**
- 5191 Buyers, Wholesale and Retail Trade**
- 5193 Driver-Salesmen**
- 5199 Other Sales Occupations, n.e.c.**

5190-SUPERVISORS, OTHER SALES OCCUPATIONS

This unit group includes occupations, not elsewhere classified, as described under the master titles, 01-180 MANAGING SUPERVISOR (any ind.) and 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with conducting businesses on own or owners' behalf or in partnership; or supervising and co-ordinating workers directly and indirectly engaged in buying commodities for resale in wholesale and retail trade; driving vehicles to deliver and sell commodities and services; selling, renting and demonstrating goods and services; and appraising commodities.

5190-110 SUPERVISOR, DRIVER-SALESMEN (any ind.) DPT:138
route supervisor.

Supervises and co-ordinates activities of workers engaged in driving vehicles over established routes to sell products or to pick up and deliver laundry and dry cleaning (Unit Group 5193):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Investigates customer complaints and collects overdue accounts.
May perform duties of absent route personnel.

5190-199 MISCELLANEOUS SUPERVISORS, OTHER SALES OCCUPATIONS

This group includes sales supervisors, not elsewhere classified; for example, those who supervise and co-ordinate the activities of workers engaged in selling, renting, and demonstrating goods and services, and appraising commodities. Typical examples of occupational titles covered by this residual group definition are:
Supervisor, Locker Plant (ret. trade)
Supervisor, Rental Service (any ind.)

5191-BUYERS, WHOLESALE AND RETAIL TRADE

This unit group includes occupations concerned with buying commodities for resale in wholesale and retail trade. Purchasing agents and officers and buyers who buy for internal use or for processing, rather than resale, are classified in Unit Group 1175, PURCHASING OFFICERS AND BUYERS, EXCEPT WHOLESALE AND RETAIL TRADE.

5191-110 BUYER (ret. trade; whole. trade) DPT:118
GED: 5 SVP: 7 EC: 1 PA: L 5 6

Buys goods for resale by wholesale or retail trade establishment, according to instructions, experience and knowledge of market trends: Reviews requirements of establishment to determine quantity and type of goods to purchase. Studies trade periodicals, sales promotion material and other market information on varieties, qualities and prices of goods available. Interviews salesmen, manufacturers and other suppliers, visits showrooms, factories and markets, and undertakes special buying missions. Negotiates prices, credit terms, discounts and delivery arrangements with suppliers. Authorizes payments of invoices or return of unsatisfactory merchandise. May inspect, sample, grade or weigh goods prior to purchase or on delivery. May price items for resale. May be designated according to type of establishment or kind of goods purchased; for example, Buyer, Chain Store (ret. trade) Wholesale Buyer (whole. trade) Meat Buyer

5191-114 BUYER, ASSISTANT (ret. trade) DPT:368
GED: 4 SVP: 5 EC: 1 PA: L 4 5 6

Assists in buying merchandise for resale in a retail store: Examines merchandise and invoices to verify quantity and quality of goods received from manufacturer or wholesaler. Advises 5191- 110 BUYER (ret. trade; whole. trade) and writes or telephones suppliers to correct discrepancies between goods ordered and goods received. Informs markers of prices and code numbers to print on price tickets and reduced prices to be used for marked-down merchandise. Inspects exchanged or refunded merchandise. See also definition for term title, 02-040 ASSISTANT (any ind.). May authorize payment of invoices or return of shipment. May approve advertising copy for newspaper.

5191-118 BUYER, SALVAGE (whole. trade) DPT:353
junkman; scrap buyer.
GED: 3 SVP: 5 EC: 1 PA: H 3 4 5 6 7

Buys scrap materials; such as, metal, rags, paper, bottles and rubber, from industrial, commercial and institutional establishments, construction projects and individuals for resale: Appraises, grades and weighs material to determine price to be paid. Purchases goods according to authorization or prospect for resale. Drives car or truck to collect or deliver material. Sells purchased material to foundries, mills and other industrial, commercial and private customers. May use cart or wagon to transport materials.

5193-DRIVER-SALESMEN

This unit group includes occupations concerned with driving trucks or other vehicles over an established route to deliver and sell goods, such as dairy and bakery products; collect and deliver items, such as laundry and dry-cleaned garments; or collect coins, refill vending machines, and service amusement machines. Deliverymen who do not sell but who may collect payment for goods delivered are in Unit Group 9175 - TRUCK DRIVERS.

5193-110 AMUSEMENT-MACHINE ROUTEMAN (amuse. & rec.) DPT:363
GED: 3 SVP: 4 EC: 1 PA: M 3 4 5 6

Collects money from, and services coin-operated amusement machines, such as juke-boxes and pin-ball machines, along established route: Selects records of popular music to be used in juke-boxes based on familiarity with current popularity. Gives directions to workers engaged in typing or printing music titles and names of entertainers on selection cards to be used in machines. Drives service truck to carry supplies and repair equipment. Changes records in machines. Records amount of money taken from machine coin boxes and pays establishment owner his share of profits. Makes minor repairs to amusement machines, using hand tools. May install amusement machines in newly contracted establishments. May be designated according to machine serviced; for example,

Juke-Box Routeman
Shuffleboard Routeman

Pin-Ball-Machine Serviceman

5193-114 VENDING-MACHINE ROUTEMAN (bus. serv.) DPT:453
GED: 3 SVP: 3 EC: 1 PA: H 3 4 5 6

Collects coins and refills vending machines that dispense items, such as cigarettes, food and beverages: Loads truck or car with supplies, according to written or verbal instructions. Drives vehicle to establishment, collects coins, refills machines, and records amount of money collected. Turns in money to cashing department at completion of route. Repairs malfunctioning machines, using hand tools, or reports malfunction to supervisor. Converses with prospective customers to persuade them to install vending machines in their establishment. May keep stock records of merchandise drawn from warehouse. May make refunds to customers, using refund slips. May report customer complaints to supervisor.

5193-118 DRIVER-SALESMAN (any ind.) DPT:353
routeman.
GED: 3 SVP: 2 EC: B PA: H 4 5 6 7

Drives truck over established route to deliver and sell merchandise, such as bakery or dairy products, on retail or wholesale basis, or services, such as laundering and dry cleaning: Loads truck with items, such as laundry and dry cleaning, bakery products or dairy products, and delivers items to customer's home or place of business. Writes delivery orders and collects payment for deliveries. Picks up empty containers, unsold merchandise, or articles to be cleaned, for return to plant. Calls on prospective customers to solicit new business and informs regular customers of new products or services. May place stock on shelves or in refrigerators. May set up displays and posters. May be designated according to product or service sold; for example, Breadman (ret. trade; whole. trade) Laundry Routeman (laund., clean. & press.) Milkman (ret. trade; whole. trade)

5193-122 MOBILE-CANTEEN DRIVER (ret. trade) DPT:473
GED: 3 SVP: 2 EC: B PA: L 4 5 6 7

Drives mobile-canteen truck on scheduled route to sell food and beverages to industrial and office workers, students and other customers at business or recreational locations: Loads and unloads truck with food items, such as sandwiches, cakes, and candy; and beverages, such as coffee, milk and soft drinks. Hands items to customers, fills beverage cups, receives payment and makes change. Maintains truck and food-dispensing equipment in clean sanitary condition and in good working order. May prepare sandwiches and brew coffee.

5193-126 DRIVER-SALESMAN HELPER (any ind.) DPT:667
GED: 2 SVP: 2 EC: B PA: M 3 4 5 6

Helps 5193-118 DRIVER-SALESMAN (any ind.) in providing sales, services or deliveries of goods to customers on an established route: Loads and unloads truck at beginning and end of trip. Carries goods from truck to customer's home or business. Collects payments or obtains receipts. May drive truck. May help solicit new business.

5199-OTHER SALES OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with activities; such as, selling, renting, and demonstrating goods and services and with appraising commodities.

5199-110 APPRAISER (bus. serv.) DPT:287
GED: 5 SVP: 7 EC: B PA: L 4

Assesses value of property, buildings, industrial and commercial machines and equipment, personal and household effects, merchandise and other articles for such purposes as loan financing, insurance, taxation, disposition of estates, liquidation of assets of bankrupt firms or resale:

Examines condition of items, computes depreciation, repair and replacement costs, and estimates wholesale or resale values according to experience and knowledge of original costs, current market values, and market trends. Submits appraisal reports to lending agencies, insurance companies, government offices, courts, attorneys, creditors, buyers, auctioneers or other clients.

May be designated according to type of item appraised or purpose of appraisal; for example,
Appraiser, Furniture Insurance Appraiser

5199-114 PAWNBROKER (ret. trade) DPT:257
GED: 4 SVP: 6 EC: I PA: L 4 5 6 7

Estimates pawn or pledge value of jewellery, cameras, musical instruments and other items and lends money to customer:

Examines pledged items to determine condition and value. Weighs precious metals on coin balance and applies acid test to determine purity. Inspects gems with loupe to detect flaws and judge colour. Assigns pledge value to article, based on experience or wholesale price listing. Lends money to customer, issues pawn ticket and records loan. Computes interest and receives payment when pledges are redeemed. Sells unredeemed pledged items.

May perform duties as described under master title, 01-180 MANAGING SUPERVISOR (any ind.).

5199-118 APPRAISER, AUTOMOBILE (ret. trade) DPT:268
GED: 4 SVP: 6 EC: B PA: L 5 6 7

Appraises automobiles to determine cash value or trade-in allowance on purchase of new or used car:

Observes condition of car, listens to engine and determines repairs required. Estimates resale value according to prevailing-price guide-books. Quotes trade-in allowance to customer or salesman.

May test drive car to assess running condition.

5199-122 FILM-RENTAL CLERK (ret. trade) DPT:367
GED: 4 SVP: 4 EC: I PA: S 5

Views, recommends and rents films to individuals and organizations, using knowledge of film content, availability of film and rental charges:

Views incoming films to familiarize self with content. Recommends films on specific subjects to show to designated group, such as school, church, club or business firm. Determines and quotes rental charges for film, depending on purpose for showing film, number of times to be shown, and size of audience. Writes orders, lists shipping and show-dates and method of shipping film. Posts film rental dates on office records to complete reservation.

May publish catalogue and write letters to customers to promote sales.

5199-126 MODEL (ret. trade; whole. trade) DPT:664
fashion model.
GED: 3 SVP: 5 EC: I PA: L 4 5 6

Models garments; such as, dresses, coats, underclothing, swimwear and suits for photographers, designers, buyers, sales personnel and customers:

Dresses in sample or completed garments, applies cosmetics, arranges hair and dons accessories, such as gloves, hat and purse. Stands, turns and walks to demonstrate garment features, such as quality, style and design, to observers at fashion shows, private showings and retail establishments.

May inform prospective purchasers of model, number and price of garments and location where garment can be purchased. May select own accessories. May perform social functions, such as greeting and introducing guests at banquets, luncheons, and tea parties.

5199-130 LINEN-RENTAL-CONTROL MAN (laund., clean. & press.) DPT:368
GED: 3 SVP: 4 EC: I PA: L 4 5 6

Contacts customers of linen-rental service to discuss inventory control and usage of rented articles:

Discusses inventory control and stock turnover with customers. Checks customers' stock, verifies inventory records and reviews customers' orders to determine stock levels and turnovers. Charges customer for loss of or damage to stock, and recalls stock overages. Investigates and resolves complaints of large depositors.

5199-134 SALES CLOSER (any ind.) DPT:358
GED: 3 SVP: 3 EC: I PA: L 5 6

Calls on individuals previously solicited in person, by telephone, or by mail to close sale on merchandise or service:

Displays, demonstrates or explains features of merchandise or service. Prepares sales order, collects deposit and gives receipt. May deliver merchandise.

5199-138 COMPARISON SHOPPER (ret. trade) DPT:368
GED: 3 SVP: 3 EC: I PA: L 7

Shops at designated competing stores to verify prices, quality and style of merchandise:

Visits stores to observe details of merchandise that will be valuable to employer in setting prices and determining buying policies. Verifies complaints of customers on price of merchandise by shopping at designated store to ascertain same quality and style for specified price. Prepares reports of findings.

5199-142 PERSONAL SHOPPER (ret. trade) DPT:378
GED: 3 SVP: 3 EC: I PA: L 4 5 6

Selects and purchases merchandise for department store customers, according to mail or telephone requests:

Speaks to customer on telephone or reads mail order to determine customer's wishes. Selects merchandise to meet requirements. Prepares order and delivery forms and forwards to other departments for processing. Keeps records of transactions.

May process merchandise returned for exchange. May escort customer through store.

5199-146 TOOL-AND-EQUIPMENT-RENTAL CLERK (misc. serv.) DPT:467
GED: 3 SVP: 3 EC: I PA: M 4 5 6

Rents tools and equipment to customers:

Suggests tools or equipment required, based on work to be done. Prepares rental form and quotes rental rates to customer. Starts power equipment to insure performance before issuing to customer and on return. Computes rental fee based on hourly, daily, weekly or monthly rates when equipment is returned. Receives and deals with customer complaints concerning tools or service. Performs minor repairs and maintains power tools and equipment.

May drive truck to deliver tools or equipment to customer.

5199-150 CAR-RENTAL CLERK (motor trans.) DPT:468
counter representative, car rental.
GED: 3 SVP: 3 EC: I PA: S 5 6

Rents motor vehicles to customers at company office, hotel or transportation terminal:

Examines customer's driver's licence to ascertain legal driving status of customer. Estimates cost of rental, writes rental contract and collects deposit. Escorts customer to vehicle or arranges for vehicle to be delivered to customer. Computes rental charges on return of vehicle, based on time, miles travelled and other charges, and collects payment. Maintains records of vehicles rented and monies handled. Provides information concerning tourist attractions, local events and accommodations.

5199-154 DEMONSTRATOR (ret. trade; whole. trade) DPT:657

GED: 3 SVP: 3 EC: 1 PA: L 4 5 6

Demonstrates articles for sale in wholesale, retail and industrial establishments, at exhibitions, or in private homes:
Arranges displays in establishments, at exhibitions and in homes, or organizes demonstration parties in private homes. Demonstrates and explains functions of items. Describes qualities and merits of items to potential customers to stimulate buying interest.
May sell or take orders for merchandise demonstrated.

5199-156 WELCOME HOSTESS (bus. serv.) DPT:358
welcome-wagon hostess.

GED: 3 SVP: 2 EC: 1 PA: S 5 6

Promotes goodwill and solicits trade for local business firms who are members of parent organization:
Develops lists of prospective clients from such sources as newspaper items, utility or transport company records and local merchants. Visits homes of new residents, recently married couples and other prospects to explain and promote services available from local merchants. Presents token gifts and gift certificates to induce clients to use local services and purchase local merchandise. Informs clients of recreation activities, transportation facilities and other community services available. Receives complaints and submits them to member firms. Prepares reports of services rendered and receptions encountered for parent organization and member firms.
May solicit new organization memberships. May organize clubs and plan parties for new residents.

5199-158 TELEPHONE SOLICITOR (any ind.) DPT:357
GED: 2 SVP: 2 EC: 1 PA: S 4 5 6

Solicits orders for merchandise or services over telephone:
Calls prospective customers to explain type of service or merchandise offered. Quotes prices and tries to persuade customer to buy, following prepared sales talk. Records names, addresses, purchases and reactions of prospects solicited. Refers orders to other workers for filling.
May develop lists of prospects from city and telephone directories.

5199-162 RENTAL-SHOP ATTENDANT, RECREATIONAL EQUIPMENT (ret. trade) DPT:477
GED: 2 SVP: 2 EC: B PA: L 4 5 6

Rents skates, bicycles, row boats or other recreational equipment at arena, park, beach or similar recreational facility, by performing any combination of the following duties:
Issues article to customer, collects payment or deposit, and records time of transaction. Receives returned article and examines it for damage. Records time of return and computes fee based on elapsed time. Sharpens ice skates, lubricates bicycles and performs similar maintenance duties.
May repair damaged equipment. May be designated according to type of equipment rented; for example,
Bicycle-Stand Attendant Skate-Shop Man

5199-199 MISCELLANEOUS SALES OCCUPATIONS

This group includes other sales workers, not elsewhere classified; for example, those concerned with providing bridal consultant services. A typical example of an occupational title covered by this residual group definition is:
Bridal Consultant (ret. trade)

PROCESSING OCCUPATIONS

This major group includes occupations concerned with refining, mixing, compounding, chemically treating, conditioning or otherwise treating materials such as ores, metals, clay, glass, stone, chemicals, petroleum, rubber, plastic, foods, beverages, paper, wood, textile fibres, hides, pelts and tobacco for direct use; or to produce semi-finished materials for further machining or fabricating; or to produce finished products, such as bricks, tiles, processed food, newsprint, lumber, plywood and cloth. These occupations are classified in the following minor groups:

- 811 Mineral Ore Treating Occupations
- 813/814 Metal Processing and Related Occupations
- 815 Clay, Glass and Stone Processing,
Forming and Related Occupations
- 816/817 Chemicals, Petroleum, Rubber, Plastic and
Related Materials Processing Occupations
- 821/822 Food, Beverage and Related Processing Occupations
- 823 Wood Processing Occupations, Except Paper Pulp
- 825 Pulp and Papermaking and Related Occupations
- 826/827 Textile Processing Occupations
- 829 Other Processing Occupations

811-MINERAL ORE TREATING OCCUPATIONS

This minor group includes occupations concerned with preparing crude mineral ores for direct use or further processing, into the finished state or any intermediate state in refining, by such means as crushing, grinding, mixing, filtering or melting. These occupations are classified in the following unit groups:

- 8110 Foremen, Mineral Ore Treating
Occupations
- 8111 Crushing and Grinding Occupations,
Mineral Ores
- 8113 Mixing, Separating, Filtering and Related
Occupations, Mineral Ores
- 8115 Melting and Roasting Occupations, Mineral
Ores
- 8116 Inspecting, Testing, Grading and Sampling
Occupations, Mineral Ore Treating
- 8118 Occupations in Labouring and Other
Elemental Work, Mineral Ore Treating
- 8119 Mineral Ore Treating Occupations, n.e.c.

8110-FOREMEN, MINERAL ORE TREATING OCCUPATIONS

This unit group includes occupations as described under the master title, 01-250 SUPERVISOR/FOREMAN (any

ind.), concerned with supervising and co-ordinating activities of workers engaged in preparing crude mineral ores for direct use or further processing.

8110-110 FOREMAN, CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES (iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in reducing minerals and ores to a smaller state by crushing, grinding and related methods, (Unit Group 8111):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular crushing or grinding process and be designated accordingly; for example,
Mill Foreman

Preparation-Plant Foreman

8110-114 FOREMAN, INSPECTING, TESTING AND GRADING OCCUPATIONS, MINERAL ORES(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in inspecting, testing and grading as described under term titles, 02-170 INSPECTOR (any ind.), 02-430 TESTER (any ind.) and 02-150 GRADER (any ind.), concerned with quality control activities in mineral ore processing, (Unit Group 8116):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8110-118 FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS, MINERAL ORES(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in labouring or other elemental work, as described under term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), concerned with preparing crude mineral ores for direct use or further processing, (Unit Group 8118):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8110-122 FOREMAN, MELTING AND ROASTING OCCUPATIONS, MINERAL ORES(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in heating mineral ores or concentrates to change them from solid to liquid state for compounding with other materials, or roasting ores and concentrates to eliminate impurities or to change state, (Unit Group 8115):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular heating or roasting process and be designated accordingly; for example,
Converter Foreman

Foreman, Sintering Plant

Reclamation Foreman

Tapper Foreman.

8110-126 FOREMAN, MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in combining mineral ores with solvents or amalgams to produce a single mass or compound, or separate desirable materials in ore or concentrate by such means as forcing it through filtering devices or screens by pressure, sifting or straining, or by centrifugal force, gravity, flotation, leaching, amalgamation, electrolysis, precipitation or agitating devices, (Unit Group 8113):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular process and be designated accordingly; for example,

Filter-Plant Foreman

Foreman, Cell Operations(non-ferrous metal)

Foreman, Lead Refining(non-ferrous metal)

Foreman, Uranium Processing(non-ferrous metal)

8110-199 OTHER FOREMEN, MINERAL ORE TREATING OCCUPATIONS

This group includes mineral ore treating foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in operating and maintaining aluminum- reduction pots, and splitting, trimming, grading and sizing mica. Typical examples of occupational titles covered by this residual group definition are:

Mica-Processing Foreman(non-ferrous metal)

Reduction-Plant Foreman(non-ferrous metal)

8111-CRUSHING AND GRINDING OCCUPATIONS, MINERAL ORES

This unit group includes occupations primarily concerned with operating and tending equipment that reduces minerals and ores to a smaller state by crushing, grinding and related methods.

8111-110 PANELBOARD OPERATOR(iron & steel; non-ferrous metal) DPT:262

central-control room operator; process operator.

GED: 4 SVP: 6 EC: 1 5 7 PA: L 4 5 6 7 Operates

panelboard in central control room to mill ore for industrial use or further processing, performing any combination of following duties:

Operates push button, switch, lever, and rheostat controls on panelboard to start plant equipment; such as, crushers, feeders, grinding mills, screens, conveyors, separators, filters, scrubbers, compressors, dust collectors and pumps. Studies production schedules and adjusts controls to draw specified amounts and proportions of different grades of materials from storage bins onto conveyors and into processing system. Observes flow of material and equipment operation on closed circuit television screens. Monitors annunciator alarms and lights on panelboard to detect equipment overloading and malfunctions. Notifies mill attendants, or maintenance personnel using public address system or telephone, to check on irregularities in system, or personally examines faulty equipment to determine nature of trouble. Shuts down plant, alters rate of feed, or reroutes materials until malfunctions have been corrected. Reads ammeters to determine load on conveyors and regulates loads to adjust blends. Compiles shift operating reports.

May process materials other than ore, such as coal and rock. May be designated according to equipment operated; for example,

Crusher-Control-Room Operator

8111-114 GRINDING-MILL OPERATOR(iron & steel; non-ferrous metal) DPT:582

GED: 3 SVP: 5 EC: 1 5 7 PA: L 4

Operates panelboard to control machinery and equipment, such as conveyor belts, vibrating feeders, rod and ball mills, distributors, centrifugal and magnetic separators, and pumps to grind ore and to separate iron particles from gangue:

Sets and adjusts automatic controls on panel, to regulate feed flow of conveyors, flow of lubricant to rod and ball mill bearings, and flow of water to mills and separators. Starts grinding and separating machinery and equipment. Observes indicator lights and gauges, and turns levers or pushes buttons on panel to adjust operating conditions, such as temperature of mill bearings, amount of electric current flowing through mill drive motors, and rate of ore flowing from feeder conveyors. Records number of machinery breakdowns and repairs, number of rods and balls charged into mills, and amount of ore processed. Cleans elevator buckets and transfer chutes, using shovel, broom and brushes.

May carry out routine maintenance on equipment, using hand tools. May pass hand magnet over sludge to determine extent of separation of iron particles from gangue.

8111-118 SLURRY-CONTROL MAN(non-ferrous metal) DPT:485
GED: 3 SVP: 5 EC: B 5 7 PA: M 2 4

Tends ball mill and auxiliary equipment that grinds and mixes bauxite with materials to form slurry for subsequent refining:
Computes amounts of bauxite, starch and liquor in specified proportion, using weightometer. Turns valves and starts ball mill to grind bauxite. Turns valves on pumps to release liquor and starch from storage bins and to mix solution with ground bauxite in ball mill to form slurry. Starts pumps to transfer slurry to digester feed tanks. Opens and closes valves to pump sodium sulphide solution into slurry to control alkalinity and acidity content. Lubricates valves, with grease gun, and adjusts packing glands to prevent leaks.

8111-122 GRINDING AND CLASSIFIER TENDER(non-ferrous metal) DPT:685
GED: 3 SVP: 4 EC: I 5 7 PA: L 2 4

Tends ball or rod mill that grinds and mixes ore with chemicals to form slurry, and classifier that separates coarse from fine particles:
Starts mill and feed conveyors. Turns pump valves to feed soda ash, starch, lime, water, ore and other materials into mill to make slurry. Pushes button to start screw conveyor that separates coarse particles from slurry and returns them to mill for re-grinding and turns valve to add chemical reagent to slurry that causes fine particles to float. Obtains sample of slurry in bucket from mill and classifier for laboratory analysis. Weighs sample on scale and calculates density of mixture, or reads density, using hydrometer. Turns valves to feed water into mill to obtain specified slurry density.
May titrate sample to measure alkalinity. May set automatic device to regulate amount of ore passing on conveyor belt to ball or rod mill. May be designated according to equipment operated; for example, Ball-Mill Operator
Rod-Mill Operator

8111-126 MILL TENDER(iron & steel; non-ferrous metal) DPT:665
GED: 2 SVP: 4 EC: I 5 6 7 PA: M 4 7

Tends milling equipment that grinds, pulverizes and screens ore-bearing rocks for further processing:
Adds or removes steel balls from mill, according to type of ore being processed. Starts conveyors, turns valves, dumps material or opens flow gate to load mill. Secures cover plate on mill. Starts and runs mill for specified time depending on size of load, grindability of material and required fineness. Removes cover plate, attaches grid, and starts mill to discharge pulverized ore. Regulates flow of materials into and out of mill when operating continuous process. Collects samples for laboratory analysis. Inspects and patrols area to adjust equipment and detect malfunctions.
May tend mill utilizing vacuum or air suction. May tend steam-jacketed mill that heats materials during processing. May keep production records.

8111-130 CRUSHER TENDER(any ind.) DPT:685
crusher man.
GED: 2 SVP: 4 EC: I 5 6 7 PA: M 4 7

Tends crusher that sizes materials, such as ore, rock, coal and salt for industrial use or further processing:
Starts crusher and auxiliary equipment in proper sequence. Moves levers to regulate flow of materials into crusher from conveyors, chutes or bins. Maintains uniform flow of crushed materials to screens or secondary crushers for further sizing, by controlling movement of conveyor belt or feeder. Stops crusher to break oversize lumps, using tools, such as bar, sledge hammer, and jackhammer, to prevent plugging. Cleans, lubricates and makes minor adjustments to crusher. May operate vibrating screens to separate materials within size ranges. May sample materials using shovel, scoop or mechanical sampler. May be designated according to type of equipment tended or material processed; for example, Cone Tender
Jaw-Crusher Operator
Ore Crusher
Rock Crusher
Salt Crusher
Stone Crusher

8111-132 CRUSHER SETTER(mining & quarrying) DPT:664
GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Adjusts gaps of cone crushers used to reduce ores to specified size:
Lowers lead cone into operating crusher that compresses cone to size of crusher gap. Measures compressed cone to determine amount of adjustment of crusher opening, using rule. Signals crane operator to turn threaded crusher bowl to set gap at specified opening. Drives wedges and bolts locking links to secure bowl, using sledges, pliers and bars.

8111-134 HYDRATE-SCALE-RECLAMATION MAN(non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 7 PA: M 4

Tends conveying and grinding equipment that reclaims aluminum hydrate scale:
Moves controls to regulate conveyor flow of hydrate scale to hammer mill and rod mill. Turns valves to add liquor to rod mill to maintain specified slurry density. Clears hoppers, pan feeders, and conveying equipment of accumulated materials, using bar, hammer or shovel. Turns valves and starts pumps to switch product flow through auxiliary units. Cleans conveyors, idlers and pulleys, using scrapers and cleaning tools. Obtains samples for laboratory analysis. Lubricates valves and adjusts packing glands to prevent leaks.

8111-138 MILL-TENDER HELPER(iron & steel; non-ferrous metal) DPT:686
GED: 2 SVP: 2 EC: I 4 5 6 7 PA: M 3 4

Helps to tend milling equipment that grinds, pulverizes and screens ore-bearing rocks for further processing:
Pulls lever to start and stop conveyor that feeds materials into mill. Shovels spillage back onto conveyor belt. Breaks large pieces of ore to facilitate passage of ore through grizzly into crusher, using bar, pick or hammer. Opens hatch and drains slurry from mill into trays. Sifts slurry to remove foreign particles, using screen or electric vibrator. Places trays in drying ovens for specified time. Lubricates mill and auxiliary equipment. Washes ball or rod mills, and cleans work area. See also definition for term title, 02-160 HELPER (any ind.).
May dump trays of dried slurry into drums. May move drums to storage area, using handtruck.

8111-142 CRUSHER HELPER(iron & steel; non-ferrous metal) DPT:687
GED: 2 SVP: 2 EC: I 5 7 PA: M 2 6

Helps to tend crushing equipment that sizes materials such as ore and rock for further processing:
Patrols area where equipment, such as crushers, conveyors and chutes are located to detect malfunctions. Reports equipment or processing abnormalities to plant operator, using telephone or intercom. Removes pieces of wood or steel from conveyor belt to prevent contamination of ore or damage to equipment. Inspects drilled holes in ore pieces passing on conveyor belt for unexploded dynamite. Inspects equipment to determine cause of trouble, estimates repairs required and notifies plant operator or maintenance crew of malfunction. Assists in repair or overhaul of equipment, working as member of crew. Performs routine maintenance, such as greasing, oiling, tightening nuts and bolts and adjusting belt tension. See also definition for term title, 02-160 HELPER (any ind.).
May clean work area, scraping and shovelling spill back on conveyor. May break, pry and force oversized rock through grizzly rails, using bar and sledge hammer. May be designated according to worker helped; for example, Ore-Crusher Helper
Rock-Crusher Helper

8113-MIXING, SEPARATING, FILTERING AND RELATED OCCUPATIONS, MINERAL ORES

This unit group includes occupations concerned with operating and tending equipment which combine mineral ores with solvents or amalgams to produce a single mass or compound; or which separate desirable materials present in ore or concentrates, by filtering or screening. Methods

employed include: pressure, sifting, straining, centrifugal force, gravity, flotation, leaching, amalgamation, electrolysis, precipitation or agitation.

8113-110 ELECTROLYTIC REFINER(non-ferrous metal) DPT:362

refinery operator.

GED: 3 SVP: 6 EC: I 4 6 7 PA: M 3 4 5 6 7

Controls equipment to refine non-ferrous metals by electrorefining: Straightens starter sheets used in electrorefining cell to prevent pointing, using sheet-rolling machine or mallet. Immerses and hangs starter sheets (cathodes) in tank, manually. Places impure anodes in filter bags, and positions them on bus bar (suspension bar) manually, or signals crane operator to lower and position anodes in cell filled with electrolyte solution. Passes steel rod between electrodes (anodes) to break off lumps which might cause short circuit and to verify specified clearance between electrodes. Examines, cleans and tightens electrical connections, using steel wool and hand tools. Turns electric current on and verifies voltage, using voltmeter. Opens and closes valves to control temperature, acidity, circulation and level of electrolyte in cells. Measures specific gravity of electrolyte, using hydrometer. Observes cropping (deposition of metal on cathode) process and signals crane operator to remove coated cathodes and depleted anodes from tank, or removes them manually. Sprays cathodes and anodes with water to remove slime and mud. Adds wash water to recovered slime and mud to remove other soluble minerals. Weighs anodes and cathodes before and after refining to calculate weight changes. Inspects cells for defects, such as loose connections, leaks, deteriorated bus bars and fittings, clogged floats and drainage connections. Repairs or replaces parts, using hand tools.

May place wood insulation chips under bus bar to control current flow through electrodes. May operate stripping equipment to recover semi-precious metals from spent electrolyte. May melt cropped semi-precious metals in furnace, and cast into bars. May remelt casted bars to further purify semi-precious metals. May be designated according to metal refined; for example,

Indium Refiner

Lead-and-Copper Refiner

8113-114 GRINDING-AND-FLOTATION OPERATOR(non-ferrous metal) DPT:482

GED: 3 SVP: 6 EC: I 4 5 7 PA: M 4 7

Operates equipment, such as ball-mill, classifier, conditioner, reagent feeders and flotation cells to grind ores and refine minerals:

Moves lever to adjust belt feeder controlling flow of ore to ball-mill. Adds or removes number of balls in mill to maintain proper grinding load. Turns valves to regulate classifier underflow to obtain maximum grinding efficiency. Sets conditioner temperature to prepare pulp for flotation. Adjusts water feed valve of ball-mill discharge to maintain required pulp density. Measures pulp density and gauges alkalinity content, using pH meter. Verifies tailings density of flotation cells and removes froth accumulation, using shovel. Transfers aerofroth to feeder pan to maintain supply of frother in flotation cell, using can. Maintains supply of depresser in flotation cells, transferring oleic acid or quebracho depressant solution to holding pan, using pump or pail. Adds quantity of chemical reagents to obtain required concentrate recovery. Turns water valves to convey froth to discharge troughs. Obtains concentrate, raw mineral and classifier samples for laboratory analysis.

May be designated according to mineral processed; for example, Fluorspar-Recovery Operator

8113-118 SLIME-RECOVERY OPERATOR(non-ferrous metal) DPT:662

slime-plant operator.

GED: 3 SVP: 5 EC: I 4 5 7 PA: M 2 3 4 5 6

Operates mineral ore treating equipment; such as, grinders, leachers, filters, presses and evaporators to recover gold, silver, selenium, and other mineral concentrates from impurities:

Grinds slag or ore impurities in ball mill and mixes product with water to form slurry. Turns valves and starts pumps to force mixture into leaching tanks. Starts agitators and adds chemicals to leach slurry solutions. Starts pumps to force leached solution through filters into settling tanks and installs orifices to control rate of flow of sediment and liquids to and from settling tanks. Feeds settled solution through

rotary drum filters, and presses filtered slime in press to form cake. Scrapes cake from filter and shovels into container for further processing. Obtains and weighs samples of slime during process for laboratory analysis. Drains and cleans tanks, wire screens, inflow pipes, and equipment with water hose.

May be designated according to mineral concentrate recovered; for example, Selenium-Plant Operator

8113-122 CLASSIFIER OPERATOR(non-ferrous metal) DPT:682

tray-thickener operator.

GED: 3 SVP: 5 EC: I 4 5 PA: L 4 7

Operates classifier units to separate coarse and fine precipitated metallic particles from liquor or slurry:

Regulates valves on settling trays of separators to draw fine particles from top and coarse particles from bottom of tray. Adjusts valves to wash liquor from coarse particles in classifier unit. Pumps slurry from underflow of tray thickeners to surge or storage tanks, for immediate or subsequent processing, such as leaching or precipitating. Lubricates valves and adjusts packing glands to prevent leaks. Takes samples for laboratory analysis. Takes pH and density readings, and checks slime level that indicates settling. Opens and closes valves, and starts and stops pumps to circulate cleaning solutions through process lines.

May keep log of operations. May be designated according to mineral processed; for example,

Aluminum Classifier

Uranium Classifier

8113-126 LEACHING OPERATOR(non-ferrous metal) DPT:682

GED: 3 SVP: 5 EC: I 5 7 PA: L 4 7

Controls equipment to leach metal from ore in solution:

Weighs sample of solution and evaporates moisture, using heater. Reweighs sample to determine percentage of solid material in solution. Siphons water from solution to obtain specified concentration, according to chart. Adjusts controls to feed chemicals, such as cyanide or acid into tank of ground ore or filtered slime. Starts mechanical or pneumatic agitators, regulates flow of air and observes agitation of solution to ascertain dissolution of ore. Tests solution to determine degree of ore concentration, using hydrometer or by titration. Forwards sample of solution to laboratory for further analysis.

May tend filtering machine to separate fluids from metal. May tend pumps to force ground ore and solution into or from tanks. May lubricate equipment and clean tanks. May turn steam valves to regulate temperature in tank. May filter samples to determine percent extraction of mineral from ore, using press. May be designated according to ore leached; for example,

Cadmium-Zinc Leacher

Molybdenum-Leaching-Plant Operator

8113-130 RESIDUAL-METAL RECOVERER(non-ferrous metal) DPT:682

GED: 3 SVP: 5 EC: I 6 7 PA: M 2 3 4

Recovers precious or semi-precious metals from residues, performing any combination of following duties:

Shovels specified amount of metallic compound into weighing bucket and dumps into tank to leach minerals. Turns valves to raise temperature and add pulp liquor into tank. Adds coagulant into tank to settle solids and pumps wash water to storage tank. Presses buttons to pump slurry from leaching to filter tank and through filter press. Scrapes filtered cake from press and transfers to container for further processing. Pumps wash liquor from storage to electrolysis tank, and adds repulp water to provide specified degree of dilution. Positions electrode on bus bar of cell and switches on electric current to separate metals by electrolysis. Removes built up cathode. Scrapes or scoops crystals from cell. Adds chemicals to filtered or precipitated mixture to strip solution of precious metals.

May melt recovered crystals in furnace and cast in bars, or compress precipitated sponges into briquettes, using hydraulic press. May take samples for laboratory analysis. May weigh, tag and transport briquettes to storage room. May be designated according to metal recovered; for example,

Gold Recoverer

Indium Recoverer

Silver Parter

8113-134 DEWATERER TENDER(non-ferrous metal) DPT:585
dewaterer operator.

GED: 3 SVP: 5 EC: I 4 7 PA: L 4 7

Tends dewatering equipment that filters minerals from slurry:

Turns valve to regulate flow of slurry to dewaterers. Observes gauges and adjusts valves to maintain pressure and vacuum on dewaterers. Adjusts variable speed drive on feeder to supply uniform feed rate from dewaterers to kilns. Adjusts valves to maintain supply of wash water and to furnish water to vacuum pumps and water-cooled bearings. Lubricates valves and adjusts packing glands to prevent leaks. Changes charts on automatic recording equipment. Records tank levels and other operating data in log. Takes samples for laboratory analysis.

May operate kilns in conjunction with dewatering equipment.

8113-138 COTTRELL TENDER(non-ferrous metal) DPT:665
dust operator; treater, cottrell.

GED: 3 SVP: 5 EC: I 7 PA: M 2 3 4

Tends battery of electrical precipitators to collect metallic or calcine dust particles from fumes of smelting ore:

Observes ammeters and voltmeters and moves panel controls to regulate flow of electric current to precipitators depending on type of metal being smelted. Switches off electric current and pulls levers to actuate air hammers or uses bar and sledge hammer to knock dust from electrodes. Replaces broken wires in precipitators, using pliers. Checks draft and temperature recording instruments on flue stack to ensure that they are operating. Closes and opens dampers for each treater compartment. Cleans treater compartments and equipment, using air and water hoses. Changes charts on recording instruments.

May turn valves to spray acid and water into chambers to oxidize dust particles or separate soluble components. May operate gas heaters to maintain stack temperature at specified level.

8113-142 PRECIPITATOR(non-ferrous metal) DPT:665

GED: 3 SVP: 5 EC: I 4 6 7 PA: L 2 4 5 6 7

Tends tanks and pumps to precipitate minerals; such as nickel, copper, gold, aluminum or uranium from slurry:

Observes indicators and adjusts valves to regulate flow of slurry into precipitators and maintain level of liquor in tanks within specified limits. Starts tank agitator and turns valves to inject specified amount of reagents or anti-foaming agents into tank. Stops agitator after specified period of time to allow minerals to settle. Pumps slurry from precipitating to thickening tanks or filter presses. Takes sample of solution and slurry at specified intervals. Keeps pipe lines clear, using metal rod or compressed air hose. Directs other workers to lubricate and perform routine maintenance on equipment.

May turn valve to circulate caustic solution in tank to break scale forming on walls. May pack zinc powder into compartments of mechanical vibrator and regulate flow of zinc that serves as precipitating agent for gold or silver.

8113-146 HEAVY-MEDIA TENDER(mining & quarrying) DPT:685

GED: 3 SVP: 5 EC: I 5 7 PA: M 3 4

Tends gravity device to separate iron ore, coal or gravel from waste:

Tests solution or reads gauge to determine specific gravity of solution in tanks. Adds heavy media, such as pulverized magnetite or ferro-silicon, using shovel and wheelbarrow. Starts oscillating rake to maintain correct density. Opens chute gate or starts conveyor to admit mixture into tank. Observes waste, such as dust, organic material or sand, float over weir or screen onto conveyor. Opens gate to draw off heavier materials such as coal, iron particles or gravel that was raked into discharge chute. Removes ferro-silicon or magnetite drawn off with coal, gravel, iron and waste from filtering device using electro-magnet, shovel and wheelbarrow.

8113-150 WATER-TREATMENT-PLANT OPERATOR(non-ferrous metal) DPT:482
fume-scrubber operator.

GED: 3 SVP: 4 EC: I 6 PA: L 2 4 7

Controls water plant equipment that scrubs and purifies gases from smelting furnaces:

Starts pumps and fans in scrubber towers and turns valves to regulate flow of water through nozzles. Dumps specified number of sacks of sulphate or soda ash into mixing tank. Starts pump or conveyor to transport mixed solution to storage tanks. Observes control panel, records readings, and calculates solution temperatures, scrubber fan loads, and flow of treatment solutions, using charts and graphs. Takes sample of treatment solutions and sludge for laboratory analysis. Measures acidity or alkalinity of clarifier overflow to determine efficiency of impurity recovery, using pH meter.

May change basket screens in reactor tanks, using chain hoist, and clean screens with water or steam.

8113-152 COAL-WASH-PLANT TENDER(mining & quarrying) DPT:685
coal washer; wet-coal-cleaning operator.

GED: 3 SVP: 4 EC: I 5 7 PA: L 4 7

Tends equipment to size and wash coal for shipment or further processing:

Starts equipment such as launderers, driers, vibrating tables, sizing screens, shakers and conveyors. Regulates flow of coal and water to separate coal from waste such as slate, rocks and other foreign material by flotation process. Transfers cleaned, dried and sized coal to loading chutes or storage. Observes gauges and indicator lights, and adjusts equipment to ensure maximum cleanliness of coal. Lubricates and performs minor maintenance on equipment.

8113-154 FLOTATION-CELL TENDER(non-ferrous metal) DPT:565

GED: 3 SVP: 4 EC: I 4 7 PA: L 4 5 6 7

Tends ore treating equipment to separate metal particles from gangue by flotation:

Patrols ore treating equipment and observes operation of flotation cells, pumps, frothers and agitators to detect malfunctions. Turns valves to regulate flow of pulp and reagents into cells. Observes froth level in cells and turns valves to increase or decrease flow of compressed air into cells to agitate mixture and promote froth. Adjusts reciprocating paddle to sweep frothed metallic bubbles into launders. Removes caked concentrate from side of flotation cells, using scraper and water hose. Takes samples of pulp and concentrate for laboratory analysis. Maintains daily production records in log.

May clean, lubricate, and assist with repairs to equipment. May tend flotation cells that are agitated mechanically. May be designated according to metal separated; for example, Copper-Flotation Operator, Molybdenum-Flotation Operator.

8113-158 ALUMINA-CLARIFIER TENDER(non-ferrous metal) DPT:665

GED: 3 SVP: 4 EC: I 7 PA: L 2 4 5 6

Tends equipment that separates mud from alumina liquor and recovers soda from mud:

Pumps thickened mud to washers and turns valves to regulate flow of water into washers. Turns valves to release specified amount of mud into washers to maintain sludge balance. Turns valves to pump sediments from washer into earthen thickeners. Opens valves to introduce starch into mud settlement and to regulate flow of milk of lime at specified rate. Directs helper to read gauges, record readings and take samples. Cleans working area, using water or air hose, broom and shovel.

May keep log of operations.

8113-162 THICKENER TENDER(iron & steel; non-ferrous metal) DPT:585
solution tender.

GED: 3 SVP: 4 EC: B 4 PA: L 4 7

Tends thickeners that separate waste solids from ore solutions preparatory to recovery of ore or disposal of waste:

Turns valves to regulate flow of mixture into thickeners. Inserts indicator into mixture to measure sludge level. Patrols work area to observe operation of equipment, overflow of concentrated ore solution, and flow of sludge from tank. Breaks up sedimentation in troughs, using wooden paddle. Takes samples of sludge and ore solutions and carries out routine tests, such as specific gravity, acidity, and titration. Prepares daily operating report indicating data, such as test results, equipment malfunctions, and operating times. May tend filters that separate ore solution into liquid and filter cake. May control processing of ore in grinding and thickening areas of plant by monitoring and making adjustments on control panel. May be designated according to materials separated; for example, Red-Mud-Thickener Tender
Tailings-Thickener Tender

8113-164 CADMIUM RECOVERER(non-ferrous metal) DPT:685

cementation tender.

GED: 3 SVP: 4 EC: I 3 4 6 7 PA: L 4 7

Tends equipment such as tanks, pumps, cones, mixers, furnaces, filters, classifiers and conveyors to recover metallic cadmium from leaching, and prepare metal for casting. Pumps solution from storage to treatment tanks and turns valves to raise temperature of solution to required level. Tests solution for copper content, using tables and formulas. Adds reagents to solution until copper content drops below specified level. Turns valves to pump treated solution through filters to remove copper precipitate. Pumps cleared solution to treatment tank and tests solution for acidity. Adds reagents to remove precipitate impurities and pumps treated solution to sponging cones. Turns steam valves to raise temperature of solution and adds zinc dust and other reagents to precipitate cadmium into granular form. Opens valves at bottom of cone to permit sludge to pour into filter where granules are retained. Discharges cadmium granules into hopper of briquetting machine, pulling lever. Starts machine to compress granules into briquettes. Melts briquettes in furnace, adds caustic soda to prevent oxidation and removes impurities from surface of melted metal.

8113-166 COPPER-DUST COLLECTOR(non-ferrous metal) DPT:685

GED: 3 SVP: 4 EC: I 4 7 PA: L 4 7

Tends dust collecting equipment in crushing department of copper refinery to recover ore from dust. Starts feed conveyors, suction fans, impellers and electrodes. Moves controls to regulate dampers, equalizing ports and water eliminators. Turns valves to fill and maintain level of water in tanks. Observes operation of equipment and filling of collected dust in hoppers to ensure efficient operation. Cleans water eliminators, impellers, hopper walls, air chambers, fan housings and wheels, safety switches and water-level-control devices, using water or air hoses. Removes and cleans strainers in water lines. Adjusts and tightens belts on motors or pulley wheels to maintain tension, using hand tools. Lubricates motors and exhaust bearings.

8113-168 FILTERING ATTENDANT(mining & quarrying) DPT:685

GED: 3 SVP: 4 EC: I 5 PA: M 4

Tends horizontal, single-leaf-rotary filters and associated equipment, such as pulp boxes, feeders and conveyors to separate slurry into water and iron concentrate. Turns rheostats to adjust speed of rotating filters to maintain specified cake thickness and moisture content of slurry. Turns valves to control flow of slurry to filters. Observes gauges and adjusts valves to control vacuum pressure in filters. Adjusts height of filter scrapers to avoid damaging filter cloths. Patrols work area to detect operating and mechanical irregularities such as plugging, leaking, stalling, overheating and vibrating. Cleans equipment and performs minor adjustments, using broom, shovel, water hose and hand tools. Cleans work area.

8113-170 ORE SEPARATOR(non-ferrous metal) DPT:685

GED: 3 SVP: 4 EC: I 4 5 7 PA: L 4

Tends equipment that separates crushed ore into sands (coarse particles) and slimes (fine particles), preparatory to concentration of metal. Starts equipment, and regulates flow of crushed ore, water and

flotation reagent into classifiers that separate coarse particles by a raking mechanism or swirling action of water, while fine particles are carried off in overflow. Observes meter indicating alkalinity of slime, and adds chemicals, as necessary. Removes sand to prevent clogging by flushing with water or by pulling lever on classifier.

May lubricate machines. May replace defective parts, using hand tools. May be designated according to type of classifier used; for example,

Cone Man

8113-172 SINK-FLOAT OPERATOR(non-ferrous metal) DPT:662

GED: 3 SVP: 4 EC: I 4 5 6 PA: M 2 4 7

Operates sink-float (gravity)equipment to separate gypsum from anhydrite by density process:

Presses buttons to start fresh water and tailings pumps, demagnetizer and magnetizer. Starts conveyor, or separator and densifier (reserve tank holding magnetite and ferro-silicon), and signals other workers to start main ore feeder belt. Observes mixture of ore on conveyor and establishes density of media in separator, using balance scale. Manipulates valves and moves lever to regulate flow of water and quantity of densifier agents to adjust media to desired density. Regulates speed of rock mixture conveyor to keep density of media constant. Performs minor repairs to equipment and machinery, using hand tools.

8113-174 TABLEMAN(non-ferrous metal) DPT:685

jig tender.

GED: 3 SVP: 4 EC: I 4 PA: M 4

Tends reciprocating tables that separate minerals from gangue of ore: Turns valves to regulate flow of concentrate and water onto tables. Regulates speed of reciprocating tables to permit settling of minerals in riffles (rows of parallel wooden slats covering tables) to effect maximum separation and recovery of metals. Adjusts slope of tables to establish line of separation between ore and gangue. Repairs tables, and adjusts and lubricates driving mechanism, using hand tools.

May be designated according to ore or material processed; for example,

Gold Jigger

Sludge Man

8113-178 ZINC-CHLORIDE TENDER(non-ferrous metal) DPT:685

GED: 3 SVP: 4 EC: I 4 7 PA: M 4 7

Tends equipment that separates zinc chloride from slag:

Loads slag into water-filled tank, using hoist, and dumps specified amount of ammonium chloride over slag. Agitates solution to dissolve zinc chloride from slag, using air hose. Determines specific gravity and acidity of solution, using hydrometer and standard test equipment. Pumps solution through filters to separate impurities. Takes samples of solution and observes colour to determine need for additional reagents and agitation. Pumps treated solution to storage tanks. Cleans sediment from equipment, using shovel and water hose.

May break up slag before loading it into tank, using sledge hammer. May replace filter cloth, using hand tools.

8113-182 REAGENT TENDER(non-ferrous metal) DPT:665

GED: 2 SVP: 4 EC: I 5 6 7 PA: L 4 5 6

Tends mechanical agitator that mixes chemicals with gangue of ore to separate and recover metallic particles:

Turns valves, or fills and dumps containers to add specified amounts of chemical, such as lime, copper and zinc sulphates, cyanide, chlorine, fuel oils, water or caustic soda from storage to mixing tanks. Starts agitator to blend mixture. Turns valves to transfer mixture to storage tank.

May tend ball-mills to produce slaked lime. May perform daily screen analysis on grinding operation to ascertain fineness of material.

8113-186 DIGESTER TENDER(non-ferrous metal) DPT:685
GED: 2 SVP: 4 EC: I 6 7 PA: M 4 7

Tends battery of digester units that dissolve bauxite ore in plant liquor to extract alumina hydrate:

Adjusts pumps and valves to circulate cleaning solution through process lines and to detect leaks in system. Turns valves to pump liquor and bauxite slurry through heaters into digester vessels. Injects milk of lime into vessels by turning valves. Minimizes presence of gases in low pressure heaters by maximizing retention time of solution in digester. Observes indicators and adjusts valves to maintain level of condensate and pond water (washing-circuit fluid) in storage tank. Collects slurry and alumina solution samples for laboratory analysis.

8113-190 MAGNETIC-SEPARATOR TENDER(iron & steel) DPT:685
GED: 2 SVP: 4 EC: I 4 PA: M 2 4

Tends magnetic separators and auxiliary equipment to recover iron concentrate from slurry:

Starts feed and discharge pumps, magnetic separators and water sprays. Patrols areas and observes operation to detect malfunctions. Cleans plugged water sprays, screens, and feed boxes, using air or water hose. Adjusts valves to control water spray on magnets. Replaces worn filters, using hand tools. Cleans work area, using broom and shovel.

8113-194 SPIRAL ATTENDANT(mining & quarrying) DPT:685
GED: 2 SVP: 4 EC: I 4 5 PA: M 2 4

Tends battery of spirals (mechanical devices) that separate slate or minerals from lighter waste rock by centrifugal force:

Starts equipment and opens feed lines to admit materials through head tanks and collection boxes into spirals. Patrols area to detect equipment malfunctions and operating irregularities. Examines samples and regulates spirals to prevent loss of fine concentrate. Observes flow of water and slurry to spiral, launders and head tanks, and adjusts flows to maintain required operating condition. Removes foreign objects from equipment, changes screen sections, and cleans blockages from feed line distributors, spirals and collection boxes, using pick, wrenches and bar.

8113-198 AMALGAMATOR TENDER(non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: M 4

Tends equipment that separates finely ground gold and silver particles from gangue, using mercury amalgamation process:

Turns valves or opens gates to charge ore concentrate and mercury into rotating-type barrels. Starts equipment and observes accumulation of amalgam. Discharges or drains barrel to recover gold and silver amalgam. Collects corduroy blankets from frames at various outflow points of refining mill, such as filter presses, jigs or traps. Washes blankets in pans of weak cyanide solution to dislodge gold and silver particles. Replaces blankets on frames after washing.

May turn valves or open gates to regulate flow of ore and water over mercury-coated plates, adjust angle of plates to facilitate collection of amalgam, scrape accumulated amalgam from plates, and coat plates with mercury.

8113-202 BRINE MAKER(mining & quarrying) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: M 2 4 7

Tends equipment, such as dissolvers and settling tanks to make brine from rock salt and fresh water, for processing into salt:

Starts feed conveyor that moves rock salt to dissolvers. Opens valves to start water flow and chemical solutions to dissolvers, and flow of affluent to settling tanks. Monitors console gauges and recorders to detect equipment malfunction. Tests density of brine, using hydrometer, and forwards samples to laboratory for analysis. Cleans residue from settling tanks periodically, using water hose. Weighs out chemical additives, such as lime and soda ash, and pours them into storage tanks. Replaces recording charts and refills inkwells on console.

8113-204 COAL SEPARATOR(mining & quarrying) DPT:685
jigman.
GED: 2 SVP: 3 EC: I 5 7 PA: L 4

Tends battery of jigs (specific gravity devices) used to separate slate from coal:

Starts and stops conveyor to regulate flow of coal into jigs. Turns valves to control pulsating flow of water through screens in bottom of jigs or regulates speed of reciprocation of screens or plunger to separate slate from coal. Lubricates jigs using oil can and grease gun.

8113-205 CONE TENDER(mining & quarrying) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: L 2 4 7

Tends cone (free-settling classifier of conical shape) that separates slate and rock from coal:

Presses buttons to start conveyor and regulate flow of material into cone. Turns valves to regulate flow of water into bottom of cone and maintain specified pressure to carry coal off with overflow while rock and slate fall to bottom. Lubricates equipment, using oil can and grease gun.

May pull lever to open slate gate and draw impurities from semiautomatic cone.

8113-206 ELECTROLYTIC-REFINER HELPER(non-ferrous metal) DPT:685
refinery-operator helper.
GED: 2 SVP: 3 EC: I 4 7 PA: M 2 4

Assists in preparing electrolytic refining tanks by performing any combination of following duties:

Cuts, strips and trims copper sheets from starting blanks, using knife, pincers, and power shear. Places sheets in machine to clean and coat them with oil solution. Cinches or rivets loop strips to sheets, using looping machine. Straightens starter sheet blanks, using paddle, sledge hammer or sheet-rolling machine. Removes, washes, and replaces copper bar (bus bars) in baths of water, acid, steam and oil. Lifts and hangs starter sheets on bus bars in tanks. Guides crane crew in positioning or removing anodes and coated starting plates. Drains, cleans, scrapes and flushes tanks, using scraping tools and water hose. See also definition for term title, 02-160 HELPER (any ind.).

May tend gas-fired burners to keep molten lead, used as starting sheets, from cooling, prior to casting. May be designated according to specific function performed; for example,

Sheet Hanger
Starting-Sheet Heater
Stripper

8113-210 SCREENMAN(mining & quarrying) DPT:685
GED: 2 SVP: 3 EC: I 5 6 7 PA: H 3 4

Tends vibrating or reciprocating screen that sizes crushed material, such as ore, coal and rock for industrial use or for further processing:

Activates controls to open and close hydraulic or pneumatic gates which regulate flow of material onto screen. Picks out refuse and impurities, such as gangue, wood and scrap metal. Unclogs conveyors and screens, using tools, such as shovel, bar and hammer. Shovels spillage onto conveyor or screen. Replaces worn or damaged screens, using hand tools.

8113-214 SLIME TREATER(non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 6 7 PA: M 4 7

Tends equipment, such as agitators and mixers to treat mineral-bearing slimes with acid, preparatory to precipitating or leaching minerals:

Pumps slime from storage into agitation tanks, by turning valves, or weighs and dumps specified quantity of slime into mixer, using pails and scale. Turns valves to regulate flow of sulphuric acid into agitator or mixer. Lights burner to heat mix, and starts machine. Tests samples of solution for alkalinity or acidity. Combines samples of solution from various stages of process for laboratory analysis. Pumps treated slime into storage tanks, by turning valves or dumps mixture on screen over drum to remove oversize pieces, manually.

May tag and place drums on pallet. May dry, grind or screen combined samples. May remove excess moisture from slime before treating, using drying tray. May be designated according to process or mineral treated; for example,

Copper-Ore-Slime Treater

Indium-Sulphation Man

8113-218 WET-PLANT TENDER(non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Tends equipment that recovers non-ferrous metals, such as zinc, cadmium or lead from dust collected in precipitators:

Dumps dust into tank from which it is processed through a series of sulphating tanks to precipitate and wash lead sulphate, zinc oxide or cadmium from dust. Pumps wash-liquor to separate tank for treatment prior to recovery of zinc oxide, or pumps batch to filters. Titrates samples or tests solution for acidity and specific gravity, using pH meter and hydrometer.

May distill cadmium in retort furnace. May prepare lime solution and mix it with zinc-oxide liquor.

8113-222 ZINC-VAPOR CONDENSER(non-ferrous metal)
DPT:687

condenser setter.

GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4

Places condenser on plate supports in front of zinc furnace retort to collect and condense zinc vapor created by heating ore:

Charges retort with mixture of ore and coal, using skip-loader, or piles zinc bars in furnace and opens gas valve. Lifts and positions condenser in front of retort, using tongs. Seals joint between retort and condenser by spreading finely ground and dampened mixture of coal, clay, and loam to prevent escape of zinc vapor. Banks mouth of condenser with mixture of coal and ore or waste material to prevent zinc from overflowing but allowing combustion gases to escape.

8113-226 ASBESTOS SCREENMAN(mining & quarrying)
DPT:685

GED: 2 SVP: 2 EC: O 5 7 PA: L 4

Tends mechanically vibrated screens that separate sand and rock from asbestos fibre:

Presses buttons to start screen vibrating and control speed of conveyor and flow of ore falling on vibrating screen. Inspects screens to ensure adequate separation of fibre from sand and rock. Shovels fallen ore back on conveyor. Clears equipment blockages, using bar.

8113-230 BAGHOUSE MAN(non-ferrous metal) DPT:685
GED: 2 SVP: 2 EC: B 5 7 PA: M 4

Tends baghouse containing floor-to-ceiling length filter bags, and related fans and conveying equipment used to recover dust, and fibres, such as asbestos, or other solids from gases or crushed ore:

Cleans embedded dust from bags, using air hose and vacuum equipment, or shakes collected fibres down chute for further processing. Removes and replaces torn bags, using stepladder and hand tools. Replaces bag shakers, air vents, exhaust systems and collapsing dampers. Clears accumulated dust and solids from flues, hoppers and conveyors. Inspects fans and gas-cooling water sprays for faulty operation. Changes air flow and temperature recording charts. Collects and tags samples of recovered materials for analysis, using cups and sample bags.

May test baghouse for carbon-monoxide or other harmful gases before entering room.

8113-234 PRECIPITATOR HELPER(non-ferrous metal)
DPT:686

GED: 2 SVP: 2 EC: I 4 7 PA: M 2 4

Helps in tending equipment that precipitates minerals; such as, nickel, copper, gold, aluminum or uranium from slurry:

Opens valves and starts pumps to fill precipitators according to schedule. Pumps specified feed charges to tanks using levelmeter to determine amount added. Drops metal weights into empty tanks to break scale and crust formations or turns valves to circulate caustic solution in tanks to break up scale forming on walls. Lubricates and performs routine maintenance on equipment as directed. Clears blockages in feed lines, using compressed air and hand tools. See also definition for term title, 02-160 HELPER (any ind.)

8113-238 REAGENT-TENDER HELPER(non-ferrous metal)
DPT:686

GED: 2 SVP: 2 EC: B 5 6 7 PA: M 2 3 4

Helps in separating and recovering metallic particles from gangue of ore:

Connects hoses to unload tank car, using hand tools. Turns valves to release air pressure into lines and observes connections for leaks. Turns valves to pump chemical solutions; such as, chlorine, caustic soda, fuel oils, lime, copper and zinc sulphates, and cyanide from tank cars into storage tanks. See also definition for term title, 02-160 HELPER (any ind.).

May clean containers, using water or steam hose. May weigh steel rods and balls, and transport them to mill using fork-lift truck.

8113-242 ALUMINA-CLARIFIER-TENDER HELPER(non-ferrous metal)
DPT:587

GED: 2 SVP: 2 EC: I 7 PA: M 2 4

Helps in separating mud from alumina liquor and in recovering soda from mud:

Turns valves to flush thickened mud from washer lines. Turns valves to divert flow of alumina liquor from washer to standby equipment to maintain sludge balance in washer. Reads gauges and records sludge levels of mud settling and washing tanks. Takes and weighs sample of mud sediment to determine density. Lubricates valves and adjusts packing glands to prevent leaks, using grease gun and hand tools. Cleans screen boxes. See also definition for term title, 02-160 HELPER (any ind.).

8113-244 COTTRELL-TENDER HELPER(non-ferrous metal)
DPT:687

dust operator helper; treaterman, cottrell.

GED: 2 SVP: 2 EC: I 6 7 PA: H 2 3 4

Helps to operate battery of electrical separators used in collecting metallic-dust particles from fumes of smelting ores, performing any combination of the following duties:

Pushes switches to shut off electric current to precipitators and observes amount of dust accumulated on electrode, pipes and plates. Pulls levers to start automatic hammers or uses bar and sledge hammer to knock dust from electrodes into collecting chambers. Opens chamber doors and blows dust remaining in chamber, using air hose. Replaces broken wires and insulator bushings in precipitators, using hand tools. Turns valves to add acid solution and water to chambers to cool and treat fumes. Samples and tests recovered dust for moisture content. Changes water spray charts. Cleans treater compartments and equipment using air and water hoses.

May be designated according to specific task performed, or metal fumes treated; for example,

Acid-Conditioning Man
Blower Man
Lead Dust Treater
Thallium Recoverer

8113-246 FLOTATION-CELL-TENDER HELPER(non-ferrous metal)
DPT:687

GED: 2 SVP: 2 EC: I 4 7 PA: M 3 4

Helps to tend flotation cells that separate minerals from gangue:

Scrapes caked waste material from sides of flotation cells, and washes cells with water. Turns valves to regulate flow of pulp and reagents into cells. Turns valves to introduce compressed air into cells to agitate mixture and promote froth. See also definition for term title, 02-160 HELPER (any ind.).

May ream out air passages of agitators, using steel rod. May collect samples of pulp and concentrate for laboratory analysis. May assist in dismantling and repairing equipment. May lubricate machine.

8113-250 SLIME-RECOVERY-OPERATOR HELPER(non-ferrous metal)
DPT:687

slime-plant-operator helper.

GED: 2 SVP: 2 EC: I 7 PA: L 2 3 4

Helps to recover gold, silver, selenium, and other mineral concentrates from impurities:

Turns valves to regulate flow of liquids into tank. Observes operation of filters, grinders, pressers, and evaporators to detect malfunctions.

Replaces worn filters, using hand tools. Lubricates valves and adjusts packing glands. See also definition for term title, 02-160 HELPER (any ind.).

May record operating data in log. May operate overhead crane to transport filters and equipment. May be designated according to mineral concentrate recovered; for example, Selenium-Recovery Helper

8113-299 OTHER MIXING, SEPARATING AND FILTERING OCCUPATIONS, MINERAL ORES

This group includes occupations, not elsewhere classified; for example, those who remove blankets from outflow points of mill and wash them in cyanide solution to dislodge and recover gold particles; operate air-powered dumping machine to charge kettle with spent lead or copper cathodes used in electrorefining process; tend battery of revolving drums and associated equipment to form green pellets of iron concentrate; strip starting sheets from cathodes; and control continuous-process equipment to remove impurities from zinc solution to produce pure electrolyte used for the electrolytic extraction of metallic zinc.

Typical examples of occupational titles covered by this residual group definition are:

Blanket Washer(non-ferrous metal)
Kettleman(non-ferrous metal)
Pelletizer(iron & steel)
Starting-Sheet Stripper(non-ferrous metal)
Zinc Purifier(non-ferrous metal)

8115-MELTING AND ROASTING OCCUPATIONS, MINERAL ORES

This unit group includes occupations primarily concerned with operating and tending furnaces and kilns that heat mineral ores or concentrates to change them from a solid to liquid state for compounding with other materials, or that roast ores and concentrates to eliminate impurities or to change their state.

8115-110 ROASTER OPERATOR(non-ferrous metal) DPT:462
GED: 3 SVP: 6 EC: I 3 6 7 PA: M 2 4 7

Operates roaster furnace to remove moisture, arsenic, or sulphur from ore in preparation for further processing:

Charges top hearth of roaster with ore, regulating rate of charge by means of chute door, pump, or automatic feed mechanism. Determines speed at which roaster is being charged by weighing sample of material obtained over measured interval of time. Starts automatic rakes that scrape hearth beds continually and move ore from one hearth to next lower one. Regulates draught and temperature of roaster by adjusting dampers and gas pressure or automatic temperature controller. Directs workers in removing incrustations from hearth beds. Removes and tests samples of material from furnace periodically, following standard procedures or sends sample to laboratory. Inspects and cleans equipment and replaces defective parts.

May clean arms of rakes with scrapers and iron bars. May operate dust-collector system from panelboard. May be designated according to roaster operated or ore processed; for example, Dross-Furnace Operator
Molybdenum-Roaster Operator

8115-114 LIMESTONE BURNER(non-metal. min. prod., n.e.c.) DPT:662
lime-kiln operator.
GED: 3 SVP: 5 EC: I 3 5 7 PA: M 4 5 6 7

Operates equipment that converts limestone into lime and carbon dioxide:

Charges kiln with limestone and coke, using hoist, or pushes controls on panelboard to convey materials to kilns. Turns controls to start fuel and air flow, and rotation of kiln. Regulates draught and vent mechanisms. Adjusts automatic scale that controls amount of limestone flowing into kiln, or weighs specified amount, using scale. Scoops samples of hot limestone from kiln for chemical analysis, using shovel, or draws burnt lime from bottom of kiln, using poke rod. Observes material flow, air, temperature, fuel charts and manometer

gauges, and makes adjustments to maintain kiln conditions within specified limits. Maintains production records.

May be designated according to type of kiln operated; for example, Rotary-Kiln Operator
Vertical-Kiln Operator

8115-118 SINTERING-MACHINE OPERATOR(iron & steel; non-ferrous metal) DPT:662
GED: 3 SVP: 5 EC: I 3 5 6 7 PA: L 4 7

Operates sintering-machine and auxiliary equipment, such as conveyors, pug mill, suction fan and mixing table to produce sinter cake from finely ground iron ore, coke, and flue dust, or non-ferrous metals, slag and other residues:

Turns gas valve of sintering-machine and ignites burner with torch or electric spark. Moves controls on panelboard to start equipment. Signals sintering crew to feed pug mill conveyor with specified amount of sinter material. Feels mixture processed by pug mill to determine moisture content. Adjusts controls to regulate water supply to attain specified moisture in mixture. Examines cake produced in sintering-machine and moves controls to distribute feed evenly across bed of machine and produce cake to specifications. Activates fans to draw and send sulphur gas to cleaning and precipitating treaters to recover metal-bearing dust. Changes grate and key bars of sintering-machine to permit even flow of material, using hand tools. Chips sinter material from chutes and spouts of machine, using bar and hammer. Prepares daily operating report.

8115-122 CALCINER(non-metal. min. prod., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 3 5 7 PA: M 2 4 7

Controls grinding mills, kettles and conveyors to grind, dehydrate and transfer gypsum or other mineral to storage bins or pulverizing machine:

Opens storage bin gates to admit mineral into grinding mill, and starts mill. Feels ground mineral for consistency and adjusts mill to obtain specified grinding. Opens chute to allow ground mineral to flow into kettle. Lights fire under kettle. Reads temperature gauge and sets automatic controls to regulate fuel feed valve and maintain specified temperature inside kettle. Collects sample of calcined mineral for laboratory analysis. Opens chute after specified time and turns air valve to force calcined minerals into hot-pits for cooling. Starts bucket elevators and conveyors to move product from pits to storage bins or to ball mill for pulverizing.

May operate rotary dryer to dry mineral before calcination. May be designated according to type of mineral processed; for example, Calciner, Gypsum

8115-126 KILN OPERATOR(non-ferrous metal) DPT:662
GED: 3 SVP: 4 EC: I 3 7 PA: M 4 5 6 7

Operates rotary kiln to calcine alumina hydrate or sinter non-ferrous metal:

Activates buttons, knobs, levers and switches to start kiln. Regulates speed, pressure, temperature, rate of oil flow, gas, air, flue gases and steam vapors to prevent overheating. Directs helpers to regulate flow of hydrated alumina or non-ferrous metal into kiln. Adjusts water supply to cooler coils, kiln trunnions and water-cooled bearings, by turning valves. Inspects kiln, carriages and drive mechanisms for malfunctioning or overheating. Maintains water and air flow through system and observes purifier that removes solids from exhaust gases. Cleans purifier, impingers and overflow tanks, using hand tools. Removes accretions from discharge end of kiln, and removes crust from interior, using pick, shovel and rod. Removes samples of calcine from bucket elevator for analysis, using spoon.

May tend bucket elevator that conveys alumina to storage bins. May direct or assist helpers in changing oil torch nozzles, lubricating valves, adjusting packing glands and cleaning pipes. May keep log of operational data.

8115-130 ORE ROASTER(non-ferrous metal) DPT:682
kilnman.
GED: 3 SVP: 4 EC: I 3 5 PA: L 4 7

Operates roaster in which cinnabar (mercuric sulphide ore) is volatilized to obtain free mercury:

Ignites gas burner and turns fuel and air pressure valves to heat roaster to specified temperature. Sets controls to regulate conveyor speed and rotation of roaster. Observes temperature gauges on

condenser unit and flow of ore into roaster. Turns controls to maintain temperature and amount of ore in roaster. Lubricates and repairs roaster and equipment.

8115-134 ROTARY-KILN TENDER(iron & steel) DPT:665
GED: 2 SVP: 3 EC: I 3 5 7 PA: M 4

Tends battery of rotary kilns that mix, heat and dry minerals; such as, lime, chrome ore and manganese to expel moisture preparatory to adding them to molten metal to form steel alloy: Signals crane operator to deliver specified type and amount of material to kiln feedbox. Pushes switches to start kiln rotating and conveyors feeding materials from feedbox to kiln. Ignites burners under kiln and moves controls to attain specified temperature. Pulls lever to dump heated material into steel box on platform scale. Weighs and records weight, type, and amount of material heated.

8115-138 LIMESTONE-BURNER HELPER(non-metal. min. prod., n.e.c.) DPT:686
lime-kiln-operator helper.
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 3 4

Helps to operate kiln used in converting limestone into lime and carbon dioxide:

Opens and closes gates on kiln to adjust draft, and to permit flow of lime from kiln onto conveyor to slaker. Removes lumps blocking discharge end of kiln, using metal poker. Pushes buttons that activate lime slaker to hydrate hot lime. See also definition for term title, 02-160 HELPER (any ind.).

May transport product to loading area of crusher, using front-end loader.

8116-INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, MINERAL ORE TREATING

This unit group includes occupations in inspecting, testing, grading and sampling work, as described under the term titles, 02-170 INSPECTOR (any ind.); 02-430 TESTER (any ind.); 02-150 GRADER (any ind.); and 02-330 SAMPLER (any ind.); concerned with performing routine evaluation tests and other quality control activities in mineral ore treating.

8116-110 RADIOMETRIC-COUNTER OPERATOR(mining & quarrying; non-ferrous metal) DPT:484
uranium-ore evaluator.
GED: 3 SVP: 5 EC: I PA: L 4 7

Operates radiometric counter to evaluate quantity of uranium in ore: Fills container with uranium ore, and ascertains weight of contents, using balance scale. Places container under radioactivity sensor that detects beta and gamma ray emissions from uranium ore. Turns switches and dials to set timer and start detector counter. Observes counter indicating lights to determine intensity of beta and gamma ray emissions, and records readings. Calculates quantity of uranium in ore by comparing reading with standard chart.

8116-114 ORE-SAMPLE TESTER(mining & quarrying) DPT:384
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Crushes, grinds and separates mineral ore samples, and performs routine evaluation tests:

Collects sample of ore from designated areas, using sampling spoons, pick and cans or bags. Starts crusher to pulverize ore. Removes ore from crusher, and places it in oven to dry. Weighs samples before and after drying, using balances, to determine moisture content. Sends portion of sample to laboratory for chemical analysis. Places sample in vibrator containing magnets and water. Starts vibrator to separate magnetic content of metallic ore from impurities. Drains water from vibrator and weighs magnetic remainder. Pours ore sample through series of vibrating screens of different size openings to separate ore samples. Weighs each size of ore, and records weights or percentages of each type. Records number and results of tests performed.

8116-116 MINERAL SAMPLER(mining & quarrying; non-metal. min. prod., n.e.c.) DPT:487
ore sampler.

GED: 3 SVP: 4 EC: B 5 6 7 PA: L 4 7

Collects, blends and grades mineral samples for laboratory analysis:

Collects samples, such as coal, coke, sand, metal-bearing ores and concentrates from locations, such as railway cars, conveyors or various plant or mine locations at specified intervals. Dumps material into bottle or bag or into machines that grind or blend samples. Feeds material onto vibrating screens to segregate samples by particle size or remove oversized particles. Weighs segregated materials separately, using small scale, and computes proportion of each in total sample. Performs magnetic separation tests, calculating and recording proportion of magnetic material. Weighs and dries samples in oven, reweighs materials and computes moisture content.

May record place of origin of samples and total weekly sample production. May label samples to indicate data such as type, origin, grit size, moisture and magnetic content and deliver to laboratory.

8116-118 IRON-PELLET-HARDNESS TESTER(iron & steel) DPT:385
sample tester.

GED: 3 SVP: 4 EC: I 5 PA: L 4

Tends tumbling drums, screens and balance scales to test hardness of baked iron-concentrate pellets:

Reads schedule to obtain specifications, such as furnace from which pellets are to be drawn and time of withdrawal, and notifies sampling personnel to prepare sample pellets. Pours sample over screen and weighs screened pellets on balance scale. Dumps pellets into drum and starts drum to rotate specified number of turns. Screens tumbled pellets and weighs them to determine weight loss from tumbling. Reads conversion chart to obtain hardness number. Records hardness number of samples tested. Cleans work area.

May test pellet-process materials, such as slurry, filter cake, bonding agents and system discharge, for compression and moisture, using riffles, screens, filters, dryers and scales.

8116-122 ELECTROLYTIC-CELL CONTROL MAN(non-ferrous metal) DPT:484
anode adjuster; cell-efficiency man; cell tester.
GED: 3 SVP: 4 EC: I 3 6 7 PA: M 4 7

Inspects, tests and adjusts anodes, cathodes and electric circuits of cells used in electro-refining of non-ferrous metals:

Attaches voltmeter wires to cell and millivoltmeter wires to anode or cathode and observes readings to determine required adjustments. Loosens anode locknut and positions nut, using wrenches or adjustable key to lower anode until specified voltage reading is attained. Records cell voltage readings before and after adjustments and number of anodes adjusted. Measures height and temperature of anodes, bath level and anode immersion, to locate defects. Gauges angle of studs imbedded in anode to ascertain correct stud planting, using measuring device. Measures cathode busbar temperature to locate hot connection or pointing, using pyrometer. Obtains bath samples and screens solution to verify alumina distribution.

May repair defective cells or notify maintenance personnel of repairs needed. May clean cells and clear clogged feed lines, using scrapers, brushes and rod. May seal cell leaks, using putty.

8116-126 COKE INSPECTOR(non-ferrous metal) DPT:667
GED: 3 SVP: 4 EC: I 3 6 7 PA: L 3 4 7

Inspects hot coke pushed from ovens and quenched coke passing on conveyor for colour, texture, quality and size:

Notifies supervisor to adjust crusher for size of coke specified. Picks irregular sized, hot and poorly carbonized coke from belt and tosses pieces into hopper. Places samples in containers for laboratory testing. Records car number, carrier, tonnage and grade of coke of each shipment. Observes conveyor belts for breaks and pulled-out lacings, and notifies maintenance department.

8116-130 MICA CLASSIFIER(non-metal. min. prod., n.e.c.)
DPT:684
inspector, mica; mica gauger.
GED: 2 SVP: 3 EC: I 7 PA: L 4 7

Grades mica sheets and strips on illuminated table according to physical characteristics, such as colour, thickness and defects:

Places sheets or strips on glass-top table and presses button to illuminate mica from underneath. Scans mica for colour and defects such as scratches, spots, stains, holes and thin or rough spots. Measures thickness of mica sheets and built-up parts to verify conformance to standards, using micrometer. Classifies sheets or strips into grade according to colour and type and number of defects, and places them into containers or stacks on handtruck. Rejects mica that fails to meet standards.

May shave sheets and built-up parts to specified thickness, using knife or shaving device. May repair thin spots with mica splittings, sprinkling glue and pressing splittings in place. May place sheets or articles on bed of magnifying viewer, using tweezers or pneumatic lifting device to examine them for conformity to specifications.

8118-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINERAL ORE TREATING

This unit group includes occupations in labouring or elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with preparing crude mineral ores for direct use or further processing.

8118-110 TAILINGS LABOURER(iron & steel; non-ferrous metal)
DPT:687
tailings-dam labourer.
GED: 1 SVP: 2 EC: B 4 PA: H 3 4

Pumps tailings (waste ore materials) through pipelines into waste basin or underground reservoir:

Opens and closes valves to regulate flow of tailings from mill or smelter to waste basin for disposal or to underground reservoir for use as back fill. Connects hoses to spigots and adds or removes pipes to lengthen or shorten discharge lines, using hand tools. Examines and replaces damaged pipes or couplings, using wrenches and pipe tongs. Digs ditches to drain water from waste basin or reservoir, using pick and shovel. Lubricates pumps, using grease gun.

8118-114 LABOURER, ORE PROCESSING(iron & steel; non-ferrous metal)
DPT:687
floorman.
GED: 1 SVP: 1 EC: B 5 6 7 PA: H 2 3 4

Performs any combination of the following duties as directed by workers engaged in crushing, sampling, refining, loading, and moving ore and other materials:

Loads and unloads material onto or from freight cars or trucks, manually or using hoist, conveyor, vacuum line, or hand truck. Opens gates on railway hopper cars to discharge materials into bins. Fills sacks or barrels with materials, such as arsenic, nickel, and selenium. Breaks slag, using sledge hammer. Weighs material, such as ore and scrap. Shovels scrap into trucks and storage bins or sorts and stacks scrap. Segregates and stacks castings, using tongs or hoist, and marks or stamps identifying data on castings. Cleans filter press canvas screens used in filtering mineral concentrate. Flushes mud and sludge from cooling and circulating tanks, using water hose and scrapers. Cleans out drains and culverts, using bar, shovel, and wheelbarrow. Removes slag from slag pots and ladles, using hammer and broom. Hooks and unhooks charge boxes and scrap trucks, to and from overhead crane. Cleans work area, and delivers samples to laboratory for analysis.

May be designated according to work area; for example, Smelter Labourer

8118-118 SALT-SCREENING LABOURER(mining & quarrying)
DPT:687
footman.
GED: 1 SVP: 1 EC: I 5 PA: M 4

Regulates flow of salt to grading screens:

Moves levers to adjust chute gate and regulate flow of salt from crusher to vibrating screens that separate salt into various sizes preparatory to shipment or refining. Cleans clogged screens with rod, and shovels spills around chutes and screens.

8118-199 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, MINERAL ORE TREATING

This group includes mineral ore treating labourers and other elemental workers, not elsewhere classified; for example, those who remove primary impurities from materials floating on vibrating table, using dressing paddle; adjust specific gravity of iron solution by feeding ferro-silicon mixture to separate iron particles from waste; seal openings around refining anodes to prevent leakage of gas; prepare and clean containers to transport or ship partly refined matte; break and remove solidified slag from runners, troughs, tracks and cars; and oil and lubricate smelting or refining machinery. Typical examples of occupational titles covered by this residual group definition are:

Drossman(iron & steel; non-ferrous metal)

Heavy-Media Helper(iron & steel)

Supply Labourer(iron & steel; non-ferrous metal)

8119-MINERAL ORE TREATING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with treating mineral ores. Activities include: operating reduction cells to smelt aluminum oxide into alumina or aluminum; operating filters, dryers and briquetting equipment to form ores into briquettes; operating and tending equipment to recover ore particles or process materials; mixing and forming of catalysts to facilitate treating operations; splitting, laminating and crushing mica; treating salt with additives, such as potassium iodide or other fortifiers; pressing and regrinding salt to obtain various sizes of salt granules; compressing loose salt into blocks; and shredding, grinding and dehydrating peat moss.

Aluminum Ore Treating Occupations

8119-110 through 8119-154

8119-110 ALUMINUM-OXIDE CONTROL MAN(non-ferrous metal)
DPT:382
GED: 3 SVP: 5 EC: I 3 6 7 PA: L 4 7

Controls temperature, chemical composition and level of cryolite baths in reduction pots to smelt aluminum oxide into aluminum:

Breaks off sample piece of crust formed on bath surface and grinds it into powder, using roll crusher. Routes sample to laboratory for analysis. Dips out sample of solution and pours it into containers, using ladle. Drops chemicals into sample and notes resultant colour. Adds required amount of chemicals and alloys to bath, according to colour shade of sample to maintain solution at specified level and composition. Measures current flow and voltage between electrical connections on pots, using meters, and computes voltage drop between connections. Measures temperature of bath, heat exchangers, and heat control pipes, using pyrometer, and turns thermostat to regulate temperature. Verifies specified distance between electrodes to prevent pointing, using measuring rod. Measures depth of bath and computes amount of aluminum available for tapping. Records tests made, amount of chemicals and alloys added to bath and amount of aluminum tapped from pots.

8119-114 ALUMINUM-BRIQUETTING-EQUIPMENT
OPERATOR(non-ferrous metal) DPT:582
 GED: 3 SVP: 5 EC: I 5 7 PA: M 4 7

Operates filters, dryers, briquetting press, electric furnace and associated equipment, such as pumps and conveyors, to produce alumina-hydrate briquettes:

Turns valves to control feed of hydrate on filters. Adjusts vacuum and air-pressure valves to regulate filtering action and control release of cake from filter surface. Turns valves to control feed of cake to dryer, observes operation and adjusts thermostat to dry cake to specified moisture content. Pumps dried hydrate to kneading mixer, turns valve to heat caustic in conditioning tank and adjusts controls to regulate flow of caustic to mixer. Starts briquetting machine and conveyor systems and observes operation to detect equipment malfunctions. Starts furnace and conveyor that carries briquettes through furnace. Observes gauge and adjusts control to maintain temperature within prescribed limits and ensure proper hardening of briquettes. Starts conveyor system to transfer finished product from storage bin to railway cars. Changes defective canvas on filters, using hand tools. Maintains production records.

8119-118 ALUMINA-RECOVERY-EQUIPMENT
OPERATOR(non-ferrous metal) DPT:682
 GED: 3 SVP: 5 EC: I 3 6 7 PA: L 2 4 5 6

Operates rotary kiln, ball mill, and conveying equipment to recover soluble soda and alumina from waste materials:

Moves lever and switch controls to start and regulate rotation speed of kiln. Moves controls to maintain specified temperatures and feed rate to kiln. Collects samples of slurry clinker from kiln and observes discharge of slurry at sample points to ensure proper burning. Moves controls of cooling air fan, cooler exhaust fan and air dampers to adjust temperature of grate cooler and air flows to burners. Moves controls and adjusts feed valves to start conveyor and bucket-elevator system, and to transport calcined clinker, bauxite and soda ash into ball mill. Regulates valves and pumps to transfer slurry from ball mill into digestion tanks and to supply water to kiln trunnions and water-cooled bearings. Replaces charts in automatic recording devices. Keeps operating log.

May direct activities of other workers engaged in tending kilns.

8119-122 CRYOLITE-RECOVERY-EQUIPMENT
OPERATOR(non-ferrous metal) DPT:682
 GED: 3 SVP: 5 EC: I 4 5 6 7 PA: M 4

Operates machines to recover aluminum and cryolite from waste and scrap pot-lining:

Sets mill gauges to specified grind and feed rate and adjusts air volume to obtain proper slurry-leaching density. Sets hearth thermostat to specified temperature, and turns valves to adjust rate of flow of steam and oil to burners. Sets timer and scale beams for precalculated mix of calcine and aluminum fluoride. Starts conveyors, grinders, roaster, mixing equipment, cooling and exhaust fans, and burners by pressing buttons and turning valves. Moves levers to regulate flow of materials and adjusts valve to control volume of dissolvent. Measures density of slurry to obtain maximum recovery, using scale and solids determination chart. Dumps bags of flour into ball mill to eliminate foaming. Carries out titration test, to determine amount of metals left in waste, records results and sends samples to laboratory for further testing. Observes recording instruments to ensure conformity of recuperation process to specifications. Unblocks outlets and feeder chute, using electric vibrator, sledge hammer and air lance.

8119-124 ALUMINUM-CELL TENDER(non-ferrous metal)
 DPT:685
potman.
 GED: 3 SVP: 4 EC: I 3 6 7 PA: L 4 7

Tends battery of reduction pots that smelt aluminum oxide into aluminum:

Sounds cell bottom to determine presence and amount of sludge and freeze, using steel bar. Breaks cell crust and adds specified amount of oxide to solution from overhead hoppers, using pneumatic crust breaking machine. Blows dust from surface of anode to receive added oxide, according to colour of solution, using air hose. Observes gas flames breaking through crust and rakes oxide over flames to prevent damage to anode. Stirs bath to eliminate gas. Observes instruments and adjusts controls to regulate temperature of solution. Adds paste to

pot and closes compartment doors to prevent gas escape and dust infiltration. Perforates holes in crust to install siphon and remove mud from pot bottom. Skims metal into crucible to remove oxidation, using ladle. Determines amount of metal to be siphoned and amount of bath to be added to solution. Siphons metal from cell into crucible, observing scale and adjusting voltage. Removes solidified bath from crust breaking machine, crucible and siphon, using bar and pneumatic hammer. Adjusts cell voltage after crust breaking and siphoning operations. Breaks off lumps formed at end of anode to prevent pointing, using bar and hammer. Repairs or changes packing on crucibles. Cleans pot room floor and equipment.

8119-126 ALUMINUM-CELL RECONDITIONER(non-ferrous metal) DPT:664
pot liner; pot-shell repairman.
 GED: 2 SVP: 4 EC: I 3 5 6 7 PA: M 2 3 4

Relines and rebuilds pots used in reduction of aluminum, performing any combination of the following duties:

Replaces spacers, shunts, risers, brackets, straps, supports and collector bars in pots, using wrenches. Attaches cables to pot superstructure and signals crane operator to lift superstructure from pot. Straightens bent or damaged supports, using oxy-acetylene torch and hammer. Blows dust from top of anode, using air hose. Cuts metal sheet to size, using shears of pneumatic cutter, bends it around stub of anode, and rivets or welds it to casing to facilitate rebuilding of anode. Pours water into pot to loosen material. Digs and removes burned-out lining, insulation ore, brick and adhering aluminum from interior of pot, using picks and pneumatic hammer. Measures and cuts steel sheets, using measuring instruments and oxy-acetylene torch to patch pots. Bores holes in shell sides to position connecting bars. Cleans and buffs bus bar and stud connectors to obtain proper electrical contacts, using hand-sanding pad or pneumatic-disk sander. Lays brick base on pot floor and signals crane operator to dump carbon mix into pot. Lines walls and floor with mix to specified depth, and tamps mix into cracks, using pneumatic hammer. Re-forms shell cavity with insulating board, masonite, plywood or sheet metal. Removes steel shell for repair, using hoist. Bolts flexible rod units to bus bar, using wrench. Dampens floor to reduce dust formation, using water hose. Records serial number and number of pots repaired.

May roughen top of stub, using fork, and pour carbon paste into form to build up anode to specified height.

8119-130 CARTRIDGE-FLUX MAKER(non-ferrous metal) DPT:684
 GED: 3 SVP: 3 EC: I 3 6 7 PA: H 3 4

Mixes flux, used in refining aluminum, according to specifications, fabricates flux cartridges and prepares cartridges for graphite-carbon tubes:

Starts mixer and dumps prescribed amounts of flux materials; such as potash, carbon, grease, water, salt and aluminum into mixer. Presses aluminum foil in forming dies, and cuts excess foil with knife to form cartridges. Starts machine that fills cartridges with flux. Cleans graphite-carbon tubes, preparatory to installing them in furnaces, with caustic solution and wire brush. Mixes silicon-aluminum paint, using paddle, and dips tubes in paint to provide protective coating. Shuts off furnace and installs tube, using wrench. Turns on chlorine system, observes gauge and regulates valves to nitrogen tank to obtain specified pressure.

May clean tools used to stir flux or skim molten metal in furnace.

8119-134 FLUX-MIXING-MACHINE TENDER(non-ferrous metal) DPT:685
fluorspar-flux maker.
 GED: 2 SVP: 4 EC: I 5 PA: M 4

Mixes fluorspar with lime and water, and filters and dries mixture to compound flux used in refining non-ferrous metals:

Moves controls to activate crushed fluorspar from reserve tank into scale decanter. Dumps specified quantity of lime over fluorspar. Adjusts air pressure and water volume in mixture to required density to obtain a flux of appropriate moisture content. Pumps mixture into filters to reduce volume of liquid in solution. Turns valves and presses buttons to convey filtered cake through drier to ensure required moisture in concentrate. Changes segments of defective canvas in filters to restore proper filtration, using hand tools. Keeps operating log.

8119-138 SMELT-HOUSE-MIXER TENDER(non-ferrous metal) DPT:685
mixing-station attendant.
GED: 2 SVP: 4 EC: I 4 5 7 PA: L 4 7

Tends machine that mixes sintered-lead or -zinc ore with materials, such as pulverized coal and coke, salt, water, skimmings and chemical solutions, preparatory to smelting:

Starts rotary drum or paddle-type mixer. Squeezes handful of mixture into lump and crumbles it to determine consistency and moisture content. Turns valves to add water, fuel oil or chemical solution into mixture. Removes mixture from mixing drum and conveyors, using bar, shovel and broom.

May weigh ingredients to be dumped into mixer. May remove foreign materials, such as wood and metal scrap passing on conveyor. May be designated according to type of mixer tended; for example, Mixing-Pan Tender

8119-146 ALUMINA-RECOVERY-EQUIPMENT-OPERATOR HELPER (non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 2 3 4 5 6

Helps in operating rotary kiln, ball mill and conveyor system to recover soluble soda and alumina from waste materials:

Moves controls to adjust feeds to rotary kiln and ball mill, and to regulate operation of dust-collecting equipment. Reads and records tank levels and slurry and soda ash temperature. Collects and weighs batches of slurry to determine density, using scale and conversion table. Measures oxygen content of flue gases to ensure proper burning and compliance with pollution control standards, using gas analyzer. Turns valves to apply water to kiln trunnions and water-cooled bearings. Lubricates valves and adjusts packing glands to prevent leaks. Cleans cooler gates, using hand tools. Keeps operating log. See also definition for term title, 02-160 HELPER (any ind.).

May take samples of slurry clinker for laboratory analysis. May move controls of cooling-air fan, cooler-exhaust fan and air dampers to adjust temperature of grate cooler and air flows to burners. May replace charts in automatic recording devices.

8119-150 ALUMINUM-SLURRY-PUMP TENDER(non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I PA: M 2 4

Tends equipment that pumps aluminum slurry from secondary thickeners through wash tanks to storage tanks:

Turns valves to regulate amount of hydrate slurry or alumina flowing into thickeners and washing tanks to maintain specified density of hydrate. Adjusts valves and pumps to transfer fluid from secondary thickeners through wash tanks and into seed-storage tanks. Tests sample of hydrate to determine density, using hydrometer. Lubricates valves and adjusts packing glands to prevent leaks. Keeps operating log.

8119-154 POTLINING-MIXER TENDER(non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends mixer to blend ingredients used in relining aluminum- reduction pots with carbon paste to form cathode:

Tends feeders, conveyors and scales to charge transfer car with specified quantities of aggregates to form potlining mix. Dumps contents of transfer car into mixer by moving levers controlling dumping mechanism. Shovels materials and turns valves to add and mix binding and hardening substances, such as coal tar and hard pitch. Starts mixer and sets timer. Forwards sample of mix to laboratory for screen and density analysis. Clears rotary feeders and screw conveyors, using sledge hammer and shovel. Maintains supply of coal tar in storage tank by starting and stopping pumps. Cleans spills, using broom and shovel.

Mica Treating Occupations

8119-174 through 8119-198

8119-174 MICA SPLITTER(non-metal. min. prod., n.e.c.) DPT:684
mica rifter.
GED: 3 SVP: 3 EC: I 6 7 PA: L 4

Peels splittings from rough blocks or defective sheets of mica for further processing:

Examines mica blocks or defective sheets to locate cleavage along which mica may be split to peel off or produce splittings of specified thickness. Inserts and twists knife or spatula into cleavage or between layers to separate splittings or layers from blocks or sheets. Gauges mica sheets with micrometer or fixed gauge to determine amount of mica to remove and to verify thickness of split sheets. Deposits salvage sheets into containers according to thickness, and rejects sheets that fail to meet specifications.

May measure length of sheets with rule and trim excess mica from sheets, using scissors or knife.

8119-178 MICA TRIMMER(non-metal. min. prod., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: I 6 7 PA: L 4 7

Trims defective portions from laminated-mica sheets, using guillotine knife:

Positions edge of sheet or strip against guide and presses pedal that activates blade to cut off defective portion. Classifies sheets or strips according to colour of mica, size, type and number of stains or spots. Places graded mica into containers according to size. Discards scrap into refuse container.

8119-182 MICA-SHEET LAMINATOR(non-metal. min. prod., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I 7 PA: L 4

Builds sheets of mica by manually gluing splittings on mylar- or polyethylene-backing sheet:

Mounts roll of plastic on conveyor spindle and unrolls and secures end. Fills glue reservoir. Starts and stops conveyor and spreads glue on unrolling backing sheet, using brush. Places and presses mica splittings on glued area. Sets thermostats on series of drying ovens at specified temperatures. Presses button to start conveyor that carries laminated sheet through ovens. Stops conveyor, releases end of laminated sheet and laps end around take-up roll.

8119-186 MICA-LAMINATING-MACHINE TENDER(non-metal. min. prod., n.e.c.) DPT:685
mica-plate layer.
GED: 2 SVP: 3 EC: I 7 PA: L 4 7

Tends machine that forms mica plates from splittings:

Turns knobs on control panel to set temperatures on series of ovens, according to specifications. Dumps mica splittings into machine hopper and opens valve to fill supply tank with binding solution. Installs roll of plastic on pay-off mandrel, manually. Threads end of plastic sheet under mica-depositing cylinder and secures end on conveyor. Sets automatic controls of shearing-knife to cut sheets of required length, using hand tools. Presses control buttons on panel to start machine that automatically sprays binding solution on vacuum sheet, deposits layer of mica splittings over binding solution, moves lay-out through series of drying ovens and cuts built-up mica into plates of specified length. Examines mica plates at discharge end of machine for variations in thickness, undulations, cracks, splits and holes. Moves controls on hopper to regulate flow of splittings and speed of depositing drum according to thickness of mica plates required. Adjusts oven controls to regulate temperature.

8119-190 MICA-SHEET SALVAGER(non-metal. min. prod., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: I 6 7 PA: L 4 7

Coats laminated sheets of mica with solution of binding agent, ground mica and silicon, and presses splittings in place to increase thickness of sheets or to fill in thin spots and cover holes:

Pours solution into trough and dips mica sheets into solution, or brushes coating solution on spots and presses splittings in place. Lays sheets on conveyor or hangs coated sheets on clips of conveyor that moves sheets through drying chamber of ovens. Removes dried sheets of mica from conveyor as they emerge from drying chamber. Trims

sheets to specified lengths and width, using paper-cutter or guillotine knife.

8119-194 MICA-PRESS TENDER(non-metal. min. prod., n.e.c.) **DPT:685**
GED: 2 SVP: 2 EC: 1 7 PA: L 4

Tends machine that compresses one or more mica sheets into single plate of specified thickness:
Slides and inserts specified number of mica sheets onto machine bed. Moves lever to close and seal door of press. Turns valve and presses buttons to circulate steam through machine to make sheets pliable, to activate ram that compresses and binds sheets together, and to circulate water through press to cool and harden plates. Removes and stacks compressed plates from machine, manually.

8119-198 MICA-PULVERIZER TENDER(non-metal. min. prod., n.e.c.) **DPT:685**
mica crusher.
GED: 2 SVP: 2 EC: 1 7 PA: M 3 4

Tends grinding mill to pulverize scrap mica for use as insulating agent: Fills mill hopper with scrap mica, using tractor equipped with scoop, or shovels mica into hopper. Lifts handle to open hopper gate to start flow of mica into mill and turns valve to admit specified amount of water. Starts mill to grind mica for specified length of time. Examines sample of mixture and adds water to mill to maintain slurry-like consistency. Opens gate on side of mill to empty mica slurry. Circulates water through mill, at end of grinding cycle, to flush grounded mica from mill, through intermediate tanks and into settling tank. Shovels oversize mica from bottom of intermediate tank back into mill for reprocessing.

Salt Treating Occupations
8119-218 through 8119-230

8119-218 SALT-FORTIFYING-EQUIPMENT OPERATOR(mining & quarrying) **DPT:482**
GED: 2 SVP: 3 EC: 1 PA: M 2 4 7

Operates equipment to mix specified amounts of additives with raw or refined salt to fortify, stabilize or colour salt products, such as table salt, salt tablets and salt blocks:
Reviews production schedules to ascertain type and quantity of additives required, such as calcium iodate, potassium iodide, red oxide, cobalt and ultra-marine blue colouring. Opens valves on hopper to start salt flow from bins into drum of mixer. Weighs prescribed amount of salt by observing level of salt in drum. Weighs specified amounts of additives, using scale, and dumps them into drum of mixer, or fills hoppers of in-line feeders and adjusts feed controls. Starts mixer and allows salt and additives to mix for specified time. Stops mixer and pulls lever to open bottom of mixer and discharge mixed product into packing bins. Makes minor repairs to equipment, using hand tools. Records amounts of additives used.
May tend briquetting and crushing machines to produce coarse grades of refined salt. May tend vibrating screens to separate salt crystals according to size. May be designated according to type of product treated; for example,
Mixer Operator, Raw Salt
Mixer Operator, Tablets

8119-222 COARSE-SALT-EQUIPMENT OPERATOR(mining & quarrying) **DPT:682**
GED: 2 SVP: 3 EC: 1 5 7 PA: M 4

Operates equipment, such as briquette press, roll crusher, vibrating screens and associated conveying systems to convert fine salt into coarse salt of specified grade:
Activates switches on control panel to start briquette press, roll crusher and conveyors. Patrols area to detect equipment malfunctions. Observes ammeter to detect overloading of screw conveyor feeding fine salt into compacting press. Feels briquettes emerging from press to ensure that briquettes are sufficiently hard to avoid crumbling during crushing process. Turns valve to spray water on briquettes to harden them. Examines vibrating screens for tears, and clears jams. Maintains operating log. Makes minor repairs to equipment, such as replacing damaged screens.

8119-226 SALT-COMPRESSOR TENDER(mining & quarrying) **DPT:685**
GED: 2 SVP: 2 EC: 1 PA: H 3 4

Tends machine that compresses loose salt into blocks, for use as cattle-feeding supplement:
Adjusts scale for required weight of salt, and opens gate to start flow of salt from bin to machine. Starts press that automatically admits measured amount of salt into compressing chamber, compresses salt into blocks and ejects formed block. Stacks blocks on pallet. Cleans and lubricates machine, using air hose, oil can and grease gun.
May mix and add specified amounts of potassium iodide or other fortifiers to salt before compressing into blocks. May carry out strength and weight tests on formed blocks, using pressure punch and scale, and record results. May mix colours, such as ultramarine blue, red oxide calcium iodate or cobalt carbonate to refined salt to be compressed into blocks or licks.

8119-230 SALT-SLAB-FORMING-MACHINE TENDER(mining & quarrying) **DPT:685**
salt-compact operator.
GED: 2 SVP: 2 EC: 1 5 7 PA: L 4 7

Tends machine that rolls and forms salt fines into sheets of rock salt to be reground into coarse produce:
Moves controls to start pressure rollers rotating and to convey salt fines to roll feeders. Turns dials and handwheels to adjust pressure of rollers to maintain specified thickness and consistency of formed product, as indicated by feel and visual inspection, and to control feed rate of fines through rollers. Replaces worn knives, that scrape formed sheet from roller surface, using hand tools. Moves controls to convey formed sheet to crusher bin.

Peat Moss Treating Occupations
8119-250 through 8119-254

8119-250 DEHYDRATOR TENDER, PEAT MOSS(mining & quarrying) **DPT:685**
GED: 3 SVP: 3 EC: 1 5 PA: M 4

Tends machines and conveyors that shred, grind and dehydrate peat moss:
Starts conveyors to move continuous flow of peat moss through shredders, grinders and ovens. Sets thermostat on oven to maintain specified temperature. Observes flow of peat moss and operation of conveyors and machines to detect malfunctions. Stops equipment to clear blockages and make minor adjustments. Feels ground peat moss to determine efficiency of drying operation.
May attach empty bag to machine for automatic filling. May staple and place filled bags on handtruck for transfer to storage.

8119-254 WATER EXTRACTOR, PEAT MOSS(mining & quarrying) **DPT:685**
GED: 2 SVP: 2 EC: 1 5 PA: M 2 4

Tends mechanical pressure rollers and associated equipment to remove water and foreign material from peat moss:
Activates controls on console board, to start vibrating screens, pressure rollers and associated conveying systems. Observes operation to detect equipment malfunctions and material blockages. Feels peat moss emerging from rollers to determine moisture content and turns handwheel to adjust roller pressure. Removes foreign material from screens. Cleans spillage, using shovel.

Other Mineral Ore Treating Occupations
8119-268 through 8119-310

8119-268 PERLITE-EXPANDER OPERATOR(non-ferrous metal) **DPT:282**
perlite burner.
GED: 4 SVP: 7 EC: 1 3 5 6 7 PA: L 4 7

Heats perlite rock in verticle kiln to expand into light, fluffy and porous substance for use as insulating material:
Turns panel controls to start flow of materials, fuel and air, rotation of

kiln and speed of conveyors and to regulate draft and vent mechanisms. Adjusts automatic scale that controls amount of perlite rock flowing into kiln. Scoops samples of hot perlite from kiln for chemical analysis, using shovel. Performs quality control test, using screens, scales, stopwatch, riffle sampler and gauges. Records test results. Observes material flow, air, temperature, fuel charts and oxygen gauges, and makes adjustments to maintain kiln conditions within specified limits. Keeps production records.

8119-274 BRIQUETTING-MACHINE OPERATOR(iron & steel; non-ferrous metal) DPT:582
briquetter operator.
GED: 3 SVP: 5 EC: I 5 7 PA: M 4

Operates equipment that dries, mixes and compresses metal dust or ore into briquettes:

Starts belt conveyors that draw mixture from wet-bin hopper to heated rotary dryer, or shovels mix into feed hopper. Cleans blocked chutes, using rod. Turns valves to set dryer at specified temperature. Feels mixture to determine moisture content and consistency. Pulls lever to open discharge gate of heating chamber to transfer mixture to mill. Opens valves to add binding solution. Opens chute to feed mixture into press to form briquettes. Adjusts die cavity of press to produce uniform briquettes, using hand tools. Starts conveyor to transfer formed product to drums or bins for shipment or storage. Monitors dryer-control panel and reports equipment malfunctions to maintenance personnel. Checks air lines to detect leaks. Lubricates equipment, using oil can and grease gun.

May fill storage hopper with pre-mixed materials, using crane or hand truck. May tend tunnel-type furnace to case-harden briquettes. May be designated according to type of mineral processed; for example, Copper-Briquetting-Machine Operator(non-ferrous metal)

8119-278 DRIER OPERATOR(mining & quarrying) DPT:682
ore-drier operator.
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Controls one or more of several types of furnaces, or kilns, driers and conveyors that dry coal or ore after washing and before milling or pelletizing:

Fires furnace, kiln or drier. Observes gauges, control panel lights, meters and recording charts to detect malfunction in equipment, or variances in drying procedures. Adjusts controls to maintain specified temperature and correct air, gas and oil flow and specified dryness. Starts conveyor and opens or closes gates of storage bins to control flow of materials into drying equipment. Observes operation to detect plugging of equipment and dislodges material, using crowbar or air hose. Observes colour of materials to determine moisture content or determines degree of dryness by observing gauges. Keeps production records.

May take samples of materials for laboratory. May control operation of scrubber that collects dust, and pump sludge from scrubber to catch basin. May position belt conveyor to unload hoppers, railway gondolas or trucks.

8119-282 ORE-PROCESSING-PIPE TURNER(iron & steel; non-ferrous metal) DPT:584
GED: 2 SVP: 3 EC: B 4 5 7 PA: H 3 4

Changes, rotates and cleans pipes that carry materials, such as concentrate slurry and tailings at smelting or refining plant:

Checks pipe lines for plugging or wear. Removes bolted couplings or flanges and changes pre-cut-pipe sections or replaces hoses on cyclone-feed and discharge lines, concentrate and tailings lines, using wrenches, chain hoist, slings and impact wrench. Loosens bolted couplings and rotates pipe, using chain wrench, so that inner pipe surfaces are worn evenly by abrasive action of slurry. Stencils and records direction and date of pipe rotation. Unplugs lines, using bar and water hose, or inserts pipe cleaner (cylindrical go-devel with scraper and leather fins) into trap of pipe and notifies pumping section to start material flow to force cleaner through pipe. Removes cleaner at end of pipe.

May extend tailing-pipe lines to distribute flow over dam area. May shovel materials from drainage ditches.

8119-284 CARNALITE-FLUX MAKER(non-ferrous metal) DPT:684
GED: 2 SVP: 3 EC: I 6 PA: M 4

Mixes, melts and pulverizes ingredients to produce carnalite flux used in refining magnesium:

Weighs carnalite and other ingredients, according to formula, using beam scale. Dumps materials into power mixer. Starts machine to mix ingredients for prescribed time. Melts flux mixture in furnace crucible. Presses switch to pump molten flux into cooling pans. Pulverizes solidified-carnalite flux in grinding mill and shovels powder into metal drums.

8119-286 FILTER-LEAVES CLEANER(iron & steel; non-ferrous metal) DPT:684
leaf coverer.
GED: 2 SVP: 3 EC: I 6 PA: M 4

Cleans and re-covers leaves of ore filtering units:

Opens filter units and removes filter leaves, using crane. Strips worn covers from leaves, using knife and wire cutters. Immerses filter leaves into cleaning vats containing caustic solution for specified interval. Brushes graphite paste on neck of leaves to provide tight seal, inserts leaves in new filter covers and closes openings of covers around necks of leaves, using twine and hand stapler. Replaces leaves in filter units, using crane. Records number of cleaned and re-covered filters.

May repair small holes in leaves, using thread and needle.

8119-290 DUST-COLLECTOR TENDER(iron & steel) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends equipment that moistens iron ore dust collected from atmosphere to facilitate recovery:

Starts dust-collection equipment and turns valves to adjust pressure to required level as indicated by manometer. Examines parts of dust-collector; such as pipes, nozzles, strainers and collection surfaces for pluggings, breaks, leaks and residue. Closes water valves and stops pumps to permit cleaning and repairing of equipment. Washes residue from collection surfaces, pumps, hoppers and fans, using water or steam hose. Removes mesh strainers or filter bags and cleans filtering media, using airhose. Replaces defective water nozzles and tightens glands on pumps and valves, using wrenches.

May record gauge readings.

8119-294 SINTER-FEEDING-MACHINE TENDER(iron & steel) DPT:685
GED: 2 SVP: 3 EC: I 6 7 PA: M 4

Tends table-feeding equipment that regulates flow of finely ground iron ore and coke from storage bins to sinter machine:

Moves controls to start feeder and conveyor belt. Opens bin gates to release specified amount of sinter material onto conveyor belt. Observes equipment to detect malfunctioning.

May record periodic weightometer readings in operating log.

8119-298 SLAG-PELLETIZER TENDER(iron & steel) DPT:685
slag-granulator man.
GED: 2 SVP: 3 EC: I 3 5 6 7 PA: M 4

Tends machine that pelletizes blast furnace slag for use in building or insulating material:

Opens gate of furnace, using control button, or tips ladle, using tipping device to allow slag to flow into stationary runners leading to pelletizer (revolving drum). Turns water, air and steam valves to spray and cool slag in pelletizer and form pellets. Positions container under discharge chute of pelletizer and starts conveyor to discharge formed pellets. Stops equipment and clears slag from runners, granulator and conveyor, using iron bar. Lubricates equipment, using grease gun and oil can.

May signal crane operator to position movable runners that carry slag from furnace or ladle to pelletizer.

8119-302 SLUG-PRESS TENDER(chem., n.e.c.; non-ferrous metal) DPT:685
pellet-press tender.
 GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4

Tends hydraulic press and auxiliary equipment that forms, pulverizes and sizes materials, such as calcium chloride or tungsten, into granular products for further processing:
 Scoops and dumps metallic powder from drum into press hopper. Starts automatic feed and ram that compresses and forms powder into pellets or slugs. Examines pellets ejected from press, and moves wheels that regulate length of ram stroke and control cooling of press, according to specifications. Tends automatic jaw crusher, oscillating granulator and tumbling barrel that crushes, granulates and rounds off sharp corners of granules. Transfers granulated product to vibrating screens to size pellets, manually. Clears plugged feed lines, using bar. Lubricates equipment, using oil and grease gun. Shovels screened product into drums for storage or further processing.

8119-306 DUST REMOVER(iron & steel; non-ferrous metal) DPT:685
flue-dust labourer.
 GED: 2 SVP: 2 EC: I 7 PA: M 4

Removes flue dust from converters, precipitators or hoppers, using vacuum or screw conveyors:
 Connects pipe from dust hopper to intake of vacuum system to draw dust into collecting apparatus. Starts electric pumps to create vacuum in pipe-conveyor system. Breaks up lodged dust with bar or pole and hammers sides of hopper with mallet or bar to dislodge contents. Observes dust-bagging process and replaces defective bags, using

hand tools. Starts screw conveyor that transports dust from baghouse or hoppers to furnaces or presses. Shovels spillage onto screw conveyor. Flushes pipes and vacuum pumps with water hose.

8119-310 FLUE-DUST SETTLER(iron & steel; non-ferrous metal) DPT:685
 GED: 2 SVP: 2 EC: I 4 5 7 PA: M 4

Tends mill that mixes flue dust with water to settle it for further processing:
 Opens bin outlet allowing dust to fall into mixing mill. Dislodges dust adhering to bin by hammering sides, using mallet. Starts mill and opens valve of water spray. Opens door of mill allowing moistened dust to fall onto conveyor leading to storage bin, railroad car or briquetting press.
 May distribute mixture evenly in bin or car, using shovel.

8119-399 OTHER MINERAL ORE TREATING OCCUPATIONS

This group includes mineral ore treaters, not elsewhere classified; for example, those who tend aluminum reduction cells to produce refined aluminum, install conducting bars in electrolytic-cell cathode blocks to ensure electrical contact, collect and dilute refinery gases to recover usable products and prevent undue pollution, and observe operations of zinc refining electrolytic-cells to ensure efficient operations. Typical examples of occupational titles covered by this residual group definition are:
 Aluminum-Cell Tender(non-ferrous metal)
 Cathode-Block Rodder(non-ferrous metal)
 Scrubber Operator(non-ferrous metal)
 Zinc-Cell Operator(non-ferrous metal)

813/814-METAL PROCESSING AND RELATED OCCUPATIONS

This minor group includes occupations concerned with processing partially or fully-refined metals to make semi-finished or finished metal stock and products by such means as melting, heat-treating, rolling, moulding, casting, drawing, extruding, plating and metal coating. These occupations are classified in the following unit groups:

- 8130 Foreman, Metal Processing and Related Occupations**
- 8131 Metal Smelting, Converting and Refining Furnacemen**
- 8133 Metal Heat-Treating Occupations**
- 8135 Metal Rolling Occupations**
- 8137 Moulding, Coremaking and Metal Casting Occupations**
- 8141 Metal Extruding and Drawing Occupations**
- 8143 Plating, Metal Spraying and Related Occupations**
- 8146 Inspecting, Testing, Grading and Sampling Occupations, Metal Processing**
- 8148 Occupations in Labouring and Other Elemental Work, Metal Processing**
- 8149 Metal Processing and Related Occupations, n.e.c.**

8130-FOREMAN, METAL PROCESSING AND RELATED OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any

ind.), concerned with supervising and co-ordinating activities of workers engaged in processing metal to make semi-finished or finished metal stock and products.

8130-110 FOREMAN, FURNACEMEN, METAL(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of furnacemen engaged in melting and refining ferrous and non-ferrous metals, charging furnace with specified raw material, adjusting temperature and tapping and pouring molten metal into ladles or moulds to form pigs or ingots, (Unit Group 8131):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with a particular type of furnace or activity and be designated accordingly; for example,

Foreman, Bessemer Furnace

Foreman, Blast Furnace(iron & steel)

Foreman, Open-Hearth Furnace(iron & steel)

Foreman, Oxygen Furnace(iron & steel)

8130-114 FOREMAN, HEAT-TREATING OCCUPATIONS, METAL(metal fab., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in altering the physical properties of metal objects, by heating, cooling or chemical treating, (Unit Group 8133):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise one or more heat-treating processes such as annealing, hardening, tempering or quenching, and be designated accordingly; for example,

Foreman, Annealing

Foreman, Quenching

Foreman, Tempering

8130-118 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in quality control of metal processing occupations, (Unit Group 8146):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in either inspecting, testing, grading or sampling materials or products, and be designated accordingly, Inspector, Chief

8130-122 FOREMAN, LABOURING AND OTHER ELEMENTAL OCCUPATIONS, METAL PROCESSING(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in labouring and other elemental work, concerned with processing partially or fully refined metals to make semi-finished or finished metal stock and product, (Unit Group 8148):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers in one or more occupations such as loading and unloading scrap metal; sorting, handling and storing ingots; stacking and weighing pigs and scrap; receiving, checking, storing and distributing raw materials; and be designated accordingly; for example,

Foreman, Scrap Preparation(iron & steel)

General-Handling Foreman

8130-126 FOREMAN, METAL EXTRUDING AND DRAWING OCCUPATIONS(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of metal forming workers engaged in extruding ferrous or non-ferrous metal into primary shapes such as pipes, tubes, bars and wire from billets, blooms or slabs, and reducing diameter of these shapes into specified dimensions, (Unit Group 8141):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with a particular activity and be designated accordingly; for example,

Foreman, Drawing

Foreman, Extruding

8130-134 FOREMAN, METAL ROLLING OCCUPATIONS(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in heating, straightening, sawing, cleaning, scalping and surfacing metal stock, and rolling blooms, billets or slabs into plates, bars or skelps, (Unit Group 8135):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8130-138 FOREMAN, MOULDING, COREMAKING AND METAL CASTING OCCUPATIONS(iron & steel; non-ferrous metal) DPT:138

Supervises and co-ordinates activities of workers engaged in making moulds and cores, and pouring molten metal or pressing powdered metal into moulds, to form ingots or castings, (Unit Group 8137):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May be concerned with a particular activity and be designated accordingly; for example,

Foreman, Coremaking

Foreman, Die Casting(non-ferrous metal)

Foreman, Moulding

8130-142 FOREMAN, PLATING, METAL SPRAYING AND RELATED OCCUPATIONS(metal stamp., press. & coat.) DPT:138

Supervises and co-ordinates activities of workers engaged in applying decorative, protective or other coating to metal objects, (Unit Group 8143):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise one or more metal-treating processes such as electroplating, dipping, pickling, spraying, anodizing, bluing, tinning, plating, galvanizing or metallizing and be designated accordingly; for example,

Foreman, Anodizing

Foreman, Electroplating

Foreman, Galvanizing

Foreman, Hot-Dip Plating

Foreman, Metallizing

Foreman, Tinning

8130-199 OTHER FOREMEN, METAL PROCESSING AND RELATED OCCUPATIONS

This group includes metal processing foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in extruding lead ingots into wire and swaging the wire into cartridge components; stocking raw materials and scrap used for open-hearth-furnace charging; refining scrap solder and tin and lead alloy to make solder; heating, forming and welding flat steel strips (skelps) to produce butt-welded pipes; sandblasting metal articles; wrapping reels of wire, tubes or rods for shipment; covering electric wire and cable with protective or insulating material; flattening and straightening surfaces of drawn or extruded metals; and making refractory plugs. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Lead-Section(ammunition)

Foreman, Open-Hearth Stockyard(iron & steel)

Foreman, Solder Making(non-ferrous metal)

8131-METAL SMELTING, CONVERTING AND REFINING FURNACEMEN

This unit group includes occupations concerned with operating and tending furnaces used in the process of converting and refining metal, melting metal for casting, and in heating metal for rolling, forging and pressing as a stage in production of semi-finished or finished metal stock or products.

8131-110 BESSEMER-CONVERTER OPERATOR(iron & steel; non-ferrous metal) DPT:462

bessemer-converter blower.

GED: 4 SVP: 7 EC: I 3 5 6 7 PA: L 4 7

Operates Bessemer converter from control board to oxidize elements such as carbon, manganese and silicon from molten pig iron or non-ferrous metal matte:

Directs workers to charge converter with molten pig iron or non-ferrous matte. Moves controls to raise converter to blowing position and to start blower that blasts air through tuyeres in bottom of converter. Observes colour and intensity of flame at mouth of converter to determine progress of oxidation. Moves controls to regulate volume and pressure of air blast or in the conversion of pig iron to dump cold pig iron or matte into converter to control temperature and rate of oxidation. Moves controls to lower converter and shut off air that terminates blow when metal has oxidized to specified composition, as indicated by characteristics of flame. Adds specified amount of element; such as carbon, manganese, silicon, gravel and limestone to recarbonize and deoxidize metal to form steel or matte of known composition. Moves controls to tilt or rotate converter to pour molten metal into ladles for further processing.

May take sample with steel ladle and forward to laboratory for X-ray spectrometer analysis.

8131-114 BLAST-FURNACE OPERATOR(iron & steel) DPT:462

blast-furnace blower.

GED: 4 SVP: 7 EC: I 3 5 6 7 PA: M 2 4 5 6 7

Controls the operation of blast furnace to produce molten pig iron or alloys:

Directs workers in charging furnace with specified amounts of raw materials, such as iron ore, coke and limestone in alternate layers. Operates battery of stoves to supply heated airblast to furnace. Observes colour of molten metal through tuyeres, or reads pyrometer, and orders changes in furnace temperature and pressure or adjusts temperature and pressure controls. Estimates amounts of ferrosilicon, manganese, and phosphorous to add to molten metal to obtain specified type and grade of pig iron. Directs workers in flushing and tapping furnace and in positioning ladles to receive molten metal. Observes colour of molten metal flowing in runners during casting operations to determine quality of iron or alloy. Plugs taphole after ladles are filled, using mud gun, and relines runners with refractory material. Obtains sample of molten metal for laboratory analysis.

May estimate and record percentage of sulphur and silicon in iron by observing sample of cooling iron and slag formation.

8131-118 OPEN-HEARTH-FURNACE OPERATOR(iron & steel) DPT:462

first helper.

GED: 3 SVP: 7 EC: I 3 5 6 7 PA: M 4 5 6 7

Operates open hearth furnaces to produce specified types of steel:

Examines raw materials for conformance to specifications. Signals furnace-charging workers to place materials in furnace. Turns fuel, air and steam controls to adjust fuel mixtures and draft. Moves levers to circulate gas throughout furnace to distribute heat and prevent burning out of furnace walls. Signals crane operator to pour molten metal in furnace. Obtains samples of metal, using long-handled spoon and pours samples in moulds for testing. Moves controls to open furnace doors and directs assistant to shovel alloy additives into furnace to obtain specified type of steel. Observes pyrometer to determine temperature of metal. Observes colour of molten metal through cobalt-blue glasses to determine tapping time and notifies superior. Directs crew in tapping furnace and adding specified additives to molten metal in ladle. Records operational data on forms. Examines furnace to determine repairs needed and directs crew in repairing furnace walls and flooring.

8131-122 OXYGEN-FURNACE OPERATOR(iron & steel) DPT:462

GED: 3 SVP: 7 EC: I 5 7 PA: L 4 5 6 7

Operates oxygen furnace and auxiliary equipment from raised platform to produce specified types of steel:

Moves controls to position furnace for charging operations. Observes temperature gauges and recorders to maintain heat at specified level. Moves controls to position oxygen lance and regulate flow of oxygen through lance onto charge, or adjusts hood draft when sparking or slopping of charge occurs or furnace overheats. Moves controls to position transfer car carrying ladle and slag pots under taphole and to tilt furnace for tapping operations. Calculates amount of hot metal, scrap, sinter and additives required for charge and directs other workers to charge furnace. Records operation data for office control purposes.

May set weight indicator gauge according to specified amount of additives to be added to charge. May start automatic weighing machine that releases additives, such as fluorspar, lime, and alloys from bins onto conveyor leading to chute over furnace. May move lever to release additives from chute into furnace.

8131-126 FURNACE OPERATOR(iron & steel; non-ferrous metal) DPT:462

GED: 3 SVP: 6 EC: I 3 5 6 7 PA: M 4 7

Controls gas, oil, and coal, vacuum, electric arc, or induction furnace to melt metal prior to casting:

Weights and charges specified amounts of metal ingots and scrap metal into furnace by hand, using hoist, or by directing crane operator. Loads molten metal into furnace, using transfer ladle. Turns valves to regulate injection of fuel and air into furnace, or moves controls to regulate flow of electricity and water coolant through electrodes to heat furnace to specified temperature. Observes colour of metal and instruments, such as voltmeter, ammeter, wattmeter and pyrometer, and adjusts controls to maintain specified temperature. Sprinkles fluxing agent over surface of molten metal to bring impurities to surface forming layer of slag. Skims off slag, using strainer. Removes crucible containing molten metal from furnace, using hoist. Moves levers to tilt crucible or open crucible door, or breaks clay plug to pour metal into ladle for transportation to moulds. Removes test sample of molten metal from crucible, using hand ladle and pours sample into mould. Records test data from each melt. Positions new electrodes over worn electrodes in electric arc furnace, using overhead crane, and screws or welds electrodes together.

May place and bolt crucible into water-filled cylinder of furnace, using hoist and power wrench. May repair furnace linings. May open slag tapping hole. May be designated according to type of furnace operated; for example,

Crucible-Furnace Operator

Electric-Arc Furnace Operator(iron & steel)

Induction-Furnace Operator

Vacuum-Furnace Operator(iron & steel)

8131-130 SMELTING FURNACE OPERATOR(non-ferrous metal) DPT:462

GED: 3 SVP: 6 EC: I 3 5 6 7 PA: M 4 7

Operates furnace to refine, melt, alloy and cast non-ferrous ore or metal to specifications:

Calculates required amount of metal, scrap and ingots needed to charge and alloy batch, according to specifications, using alloy conversion chart. Assists furnace crew in weighing metals and charging furnace. Sets furnace controls to regulate flow of air, gas, oil or current to heat metal to specified temperature. Adjusts water sprays, fan speeds and dampers to control flow of flue gas and draft temperature. Observes colour, fluidity of molten bath and appearance of metal to estimate temperature, or measures temperature, using pyrometer. Inserts end of green pole into furnace to prevent oxidation. Adds reagents to remove impurities according to type of metal. Skims slag using rabble, dross hoe or ladle. Opens blowers to force air through tuyeres to agitate bath, and stirs with iron rod to release oxygen. Seals tap holes with fire clay and bricks. Instructs crew in fluxing and maintaining required temperature during melting process and in syphoning and dumping metal. Regulates controls to tilt or turn furnace and tap metal into moulds. Lifts and transfers ladles of melt, using hoist. Prepares samples of furnace feed for laboratory analysis and forwards boxes of slag, speiss and recovered dusts to other parts of plant for further processing. Sprays moulds with bone ash or lampblack to prevent metal from adhering to moulds.

May replace defective parts and clean equipment. May be designated according to type of furnace operated or product processed; for example,
Copper Melter
Electric-Furnace Operator
Reverberatory-Furnace Operator

8131-134 BLAST-FURNACE TAPPER(iron & steel) DPT:664
blast-furnace keeper.

GED: 3 SVP: 6 EC: I 3 5 6 7 PA: H 4 5 6 7

Taps blast furnace to pour molten metal into ladles:

Drills or blasts taphole preparatory to tapping furnace, using power hand drill or blasting powder. Positions splash plate in front of taphole to prevent metal splashing. Taps furnace to fill ladle, guiding point of oxygen lance into taphole or placing and setting powder charge. Opens gates and shutters to direct flow of molten iron onto runners and into ladles, using steel bar. Plugs taphole after ladles are filled to stop flow of molten metal, using mud gun. Assists other workers in breaking up and removing solidified slag from runners to permit free flow of metal, using chisel-edged bar, hammer or oxygen lance. Assists in relining runners with sand, clay and refractory mixture, and drying relined runners using gas burner. Repairs or requests repairs on defective tuyeres, blowpipes and boshplates in furnace, using hand tools.

8131-138 MIXER OPERATOR, MOLTEN METAL(iron & steel; non-ferrous metal) DPT:562

GED: 3 SVP: 5 EC: I 3 5 6 7 PA: L 4 5 7

Operates machine to mix various charges of molten metal and maintain metal at specified temperature for use in converters and furnaces:

Moves controls to raise lid of mixer and operates crane, or signals crane operator to pour metal from transfer ladle into mixer. Turns controls to adjust fuel and air mixture to mixer burners to maintain specified temperature in mixer, and to rotate arm that mixes molten metal. Operates crane, or signals crane operator to position ladle for receiving molten metal from mixer for delivery to converters or furnaces. Moves controls to tilt mixer and fill ladle. Samples molten metal in ladle, using long-handled spoon, and forwards sample to laboratory for analysis. Observes condition of ladles and removes those showing defects or excessive wear for repair.

8131-142 HEATER, METAL(any ind.) DPT:662

GED: 3 SVP: 5 EC: I 3 5 6 PA: H 3 4 5 6

Controls oil, gas, or electric furnace to heat stock, such as billets, bars, plates and rods in preparation for further processing:

Ignites furnace burners with torch, and turns valves to regulate flow of fuel and air to burners. Reads dials and gauges and turns knobs to maintain specified temperature. Positions stock in furnace, using conveyor, hoist or tongs or signals 8131-162 FURNACE CHARGER (non-ferrous metal) to load stock. Observes colour of metal or reads gauges to determine when stock reaches specified temperature. Observes passage of steel for stickers, and buckling, and clears blockages using bar, pusher, wrench or hook. Removes stock from furnace.

May work as member of crew. May shape heated metal stock, using template or mould, and power hammer. May place heated workpiece on conveyor for transporting to work area. May turn knobs to synchronize speed of feed and takeoff conveyors of automatic furnace. May record kind and number of metal pieces heated.

8131-146 CUPOLA TENDER(iron & steel) DPT:665
cupola furnaceman; cupola melter.

GED: 3 SVP: 5 EC: I 3 5 6 7 PA: M 3 4

Tends cupola furnace to melt and refine iron, scrap metal and other additives to produce iron castings:

Closes and props door in bottom of cupola. Shovels sand into cupola and tamps sand to form wedge-shaped layer on cupola bottom sloping toward tap hole. Kindles fire in coke bed of cupola. Adjusts speed of blowers that supply air to cupola. Signals other worker to begin charging (loading) metal, coke and limestone into cupola. Reads gauges indicating data such as temperature of molten metal in cupola and amount of air flowing into and out of cupola and adjusts controls accordingly. Taps molten metal from cupola. Estimates physical properties of metal being melted by checking colour of slag draining

from surface of molten metal. Pulls prop from bottom doors of cupola when shutting down furnace to allow residual materials to drop out.

May chip slag, ash or other foreign materials from interior walls of cupola, using pneumatic chipper or hammer and chisel. May patch and reline cupolas or receiving ladles with refractory materials. May direct other workers who prepare cupola for charging or who load charge into cupola.

8131-150 ALUMINUM-POWDER MAKER(non-ferrous metal)

DPT:682

GED: 3 SVP: 5 EC: I 5 6 PA: L 4 7

Operates electric furnaces to atomize aluminum ingots into powder of specified fineness:

Connects atomizing nozzle assembly to hot air line, using clamps. Moves controls to switch on air booster compressor to obtain required air pressure. Pre-heats nozzle assembly, placing it in close proximity to molten metal to prevent freezing of metal in nozzle and possibility of explosion. Adjusts controls, observes and regulates temperature and air intake. Opens hot air valve, manually to siphon metal from furnace through nozzle jets. Observes vaporization appearance of molten metal blown from jets into powder collection duct to detect malfunctioning. Listens to sound of jets to detect proper operation and makes adjustments to obtain powder of specified fineness. Changes obstructed jets and ducts, using hand tools. Cleans plugged jets, using scrapers, brushes and wires. Replenishes metal supply in furnaces manually by dumping in ingots without causing undue temperature fluctuations, or transfers pre-heated ingots from crucible using hoist. Pulls plugs from tap holes to empty furnace, using chain block.

8131-154 CHARGING-MACHINE OPERATOR(iron & steel)

DPT:683

charging-car operator; furnace charging-machine operator.

GED: 3 SVP: 5 EC: I 3 5 6 7 PA: L 4 7

Operates charging machine, in a steel producing plant, to charge (load) open-hearth furnaces with materials such as limestone, pig iron and steel scrap:

Moves controls to engage arm of charging machine in slot of charging box located on charging buggy (railcar). Operates lever controls to position charging machine at door of furnace, to thrust box through door and rotate arm to dump contents of box on furnace floor. Withdraws empty box, deposits it on charging buggy and moves charging machine to next furnace to repeat process.

May operate arm on charging machine for other tasks such as positioning hot metal pouring spouts at furnace doors.

8131-158 KETTLEMAN, LEAD(non-ferrous metal) DPT:485

GED: 3 SVP: 4 EC: I 3 6 7 PA: H 4 7

Tends oil or gas-fired kettles to melt and refine lead:

Fires kettles and turns valves to regulate fuel flow. Loads kettle with lead in molten, pig, scrap or button form, using crane, pails or shovels. Adds specified type and amount of reagents, such as caustic, to settle lead. Agitates mixture to cause impurities such as antimony, arsenic, bismuth and tin to float to surface and form into dross. Skims dross into buckets, using ladle, shovel or dipper. Weighs dross in buckets to calculate percentage of impurities in batch, using floor scale. Throws zinc bricks into kettle and agitates mixture to de-silverize lead, skims crust of silver and gold content into basket of press, and compresses dross with air-driven ram to remove foreign matters from non-electrolyte refined lead. Pumps lead into moulds or through reaction cylinder while chlorine is admitted to form zinc chloride slag. Skims slag into buckets after completion of reaction as indicated by colour of slag and molten metal, and weighs slag, using floor scale. Pours reacted metal into moulds. Removes and dips samples into cold water to prepare samples for laboratory analysis. Hooks pot or lead button to crane and transfers to de-arsenizing kettle.

May crystallize zinc in water-cooled vacuum tank to remove zinc from de-silverized lead. May produce antimony crystals from antimonial lead by mixing prescribed reagents with molten metal in kettle, skimming dross and cooling bath to specified temperature. May be designated according to task performed; for example,

De-Arsenizing Kettleman

De-Silverizer

8131-162 FURNACE CHARGER(non-ferrous metal) DPT:684
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 4 7

Charges smelting furnaces with ore, coke, flux or other materials, by performing any combination of the following duties:

Weights metals and hardening agents to produce specified alloys, using scale. Moves levers to open hopper or chute gate to pour materials into barrows, cars or directly into furnace, or uses car-dumping machine or power shovel to lift and dump materials into furnace. Drives industrial truck or pushes buggy to furnace area, dumps material on floor and shovels or pushes it into furnace with powered scraper. Spreads and stirs molten batch to alloy metals according to specifications, using industrial trucks equipped with rake, or using bar and rabble. Skims slag from top of molten metal. Controls furnace heat by regulating fuel flow. Operates siphon equipment to draw molten metal from melting hearths to holding hearth. Removes samples for laboratory tests. Examines melting operations to determine volume of air required, and adjusts blower speed or taps furnace tuyeres. Cleans and washes tools.

May spray inner surface with clay wash to prevent adherence of metal to walls. May pierce condenser seal with rod to free carbon monoxide gas and allow zinc vapors to flow from retort. May position moulds with chain hoist and pour metal to form ingots.

8131-166 FURNACE TAPPER(iron & steel; non-ferrous metal) DPT:664
crucible man; settler slagman.
GED: 2 SVP: 4 EC: I 3 5 6 7 PA: H 4 5

Taps refining furnaces or reduction pots to pour molten slag, steel or non-ferrous metal into moulds, crucibles or ladles:

Punches clay plug from taphole, using steel rod, to allow molten metal to flow into moulds, ladles or slag pots. Moulds clay plugs and inserts them into taphole to stop flow of metal, using rod. Chips solidified slag and metal from taphole and spout, using chisel edged bar. Signals crane operator to place pouring crucible near pot or replace full pots. Lines trough between furnace and ladle with asbestos, firebrick, clay or ceramic foam block. Turns spout stopper to regulate flow of molten metal into ladle or mould.

May place metal splash plates over trough and in front of tapping hole, to prevent molten metal from splashing.

8131-170 OPEN-HEARTH-FURNACE HELPER(iron & steel) DPT:684
second helper.
GED: 2 SVP: 4 EC: I 3 5 6 7 PA: H 4

Assists open hearth furnace operator to melt and cast iron and steel in open hearth furnaces:

Opens furnace tap holes, using bar, oxygen lance and torpedo gun (explosive device). Closes furnace tap holes with pipe, dolomite or magnesite to stop flow of molten metal, and relines steel runners. Weighs additives such as fluorspar, ferro-manganese, ferro-silicon, limestone and steel scrap, and wheels or conveys them in charging boxes to furnace areas, using electric crane. Repairs walls and bottom of furnaces, using dolomite gun. Assembles tapping bar prior to tapping furnace. Shovels refractory materials into furnace. Assists crew in slagging or flushing furnace. Starts furnace by igniting gas with torch. See also definition for term title, 02- 160, HELPER (any ind.).

May assist maintenance personnel in replacing burner tips, using hand tools.

8131-174 PRECIOUS METAL MELTER(non-ferrous metal) DPT:684
melter, jewellery.
GED: 2 SVP: 3 EC: I 3 6 7 PA: L 4 7

Melts gold or gold and silver alloys, or other precious metals, using furnace or torch, and pours molten metal into ingot moulds to prepare metal for use in making jewellery:

Places cold metal in clay crucible. Heats crucible with torch to melt metal, or places loaded crucible in preheated oven. Observes colour changes in metals to insure proper temperature is attained. Pours molten metal into ingot mould. Opens mould, lifts out ingot with tongs, and quenches ingot in water. Delivers cooled ingots to vault. Keeps work areas clean to minimize losses of precious metals, using broom, brushes and scrapers.

8131-178 METAL RECLAIMER(explosives) DPT:685
burning-plant operator; salvager.
GED: 2 SVP: 3 EC: B 3 5 6 PA: H 4

Tends furnace that heats scrapped small arms ammunition to explode powder and reclaim lead and brass:

Pulls trucks of tote boxes of scrapped ammunition from storage area to furnace hoppers. Scoops or dumps tote boxes of primers or loaded cartridges into hopper. Shovels exploded primers from furnace floor or skims cartridge and bullet cases from surface of molten lead, using skimming tool, and deposits them in containers according to type of metal. Ladles molten lead from furnace pot into pig moulds. Carries cooled pigs to storage area, using handtruck, and stacks them on skids. May burn defective ammunition such as scrapped caps, detonating relays and fuses in open pit to reclaim metal and dispose of explosive, using remote-control equipment.

8131-182 SCRAP REMELTER(non-ferrous metal) DPT:685
furnace tender; salvage man.
GED: 2 SVP: 3 EC: I 3 6 7 PA: H 4

Tends furnace that remelts non-ferrous scrap metal and casts it into ingots or pigs for reuse:

Shovels or throws specified portions of scrap metal and ingots into furnace. Regulates furnace controls to attain required temperature. Skims dross (scum) from surface of molten metal, using hand strainer, scoop or ladle. Adds flux to molten mass to force impurities to surface. Turns valve and allows molten metal to run into moulds to form pigs. Removes cooled pigs from moulds and stacks them in storage area.

May convey ingots to die-casting machines to replenish supply, using overhead monorail or cart. May clean furnace and equipment. May be designated according to metal re-melted or machine tended; for example,

Reduction-Kettle Tender
Scrap Die-Casting Smelter

8131-186 FURNACE-OPERATOR HELPER(iron & steel; non-ferrous metal) DPT:666
GED: 2 SVP: 3 EC: I 3 5 6 7 PA: H 3 4

Assists 8131-126 FURNACE OPERATOR (iron & steel; non-ferrous metal) by performing any combination of following duties:

Seals furnace opening with fire clay and brick, using paddle and shovel. Charges furnace with materials, such as scrap, ore, flux reagents, slimes, oxides, pellets or coke by moving levers to open bin or hopper gates, by shovelling or by signalling crane loading crew. Turns valves to force air through tuyeres into molten metal to oxidize impurities. Stirs molten metal with green poles to prevent copper from oxidizing. Skims slag from molten metal, using bar, rabble or ladle. Cleans slag from tuyeres to let air flow, using bar, hammer or pneumatic drill. Removes and inserts tapping plug, using sledge. Signals crane crew or uses electric hoist to position ladles or buckets near furnace, and moves levers to tilt furnace into pouring position. Assists in installing electrodes and furnace water cooling system. Taps furnace by punching hole in crust at furnace opening with bar and sledge hammer or air cylinder operated bar. Scrapes and chips slag, solidified metal, furnace lining and residue from furnace, using scraper, hammer and chisel or inserts pipe loaded with explosives inside furnace and sets off charge, using electric connection. Breaks condensers and defective retorts with sledge hammer for removal to crusher. Raps flues and dust catchers with bar to remove dust. See also definition for term title, 02- 160 HELPER (any ind.).

May open chute to fill car with dust removed from furnace. May be designated according to task performed; for example, Furnace Puncher

8131-190 MIXER OPERATOR HELPER, MOLTEN METAL(iron & steel) DPT:666
mixer spotter.
GED: 2 SVP: 3 EC: I 3 5 6 7 PA: M 4 5

Assists in transferring molten metal from ladle car to mixer or open-hearth furnace for further processing:

Attaches electrical connections to ladle car and pushes controls to tilt car, or attaches hooks of crane to lugs on ladle and signals crane operator or mixer operator to tilt car and transfer molten metal from ladle car to mixer or open-hearth furnace. Chips off solidified slag from pouring spout and rim of ladle, using hammer and bar. Replaces ganister (refractory material used for protecting metal spout from

molten metal) on mixer or open-hearth furnace, using bar, hammer, shovel and gas torch. See also definition for term title, 02-160 HELPER (any ind.).

8131-194 BLAST-FURNACE-TAPPER HELPER(iron & steel; non-ferrous metal) DPT:687

blast-furnace-keeper helper; cinder snapper; clayman.

GED: 2 SVP: 3 EC: I 3 5 6 7 PA: H 3 4

Assists in tapping blast furnace:

Breaks slag from casting equipment, such as slag runners, iron troughs, gates and dams, using bar, hammer and shovel. Relines runners, troughs, gates and dams with refractory materials, such as fireclay, sand and coal dust. Cleans and loads clay gun for plugging taphole. Removes obstructions in runners during casting operations, using tong bar. Obtains sample of molten iron during cast, using spoon, and pours sample into test mould. Assists in changing tuyeres, cooler, cinder notches and blowpipes on blast furnace, using hand tools. Cleans dust, debris and solidified metal from blast furnace and casting area. Drills tapholes in furnace to draw molten metal, using pneumatic or electric drill. Assists in positioning splash plate in front of taphole. See also definition for term title, 02-160 HELPER (any ind.).

8131-198 HEATER, METAL, HELPER(any ind.) DPT:687

GED: 2 SVP: 3 EC: I 3 5 6 7 PA: M 4 7

Assists 8131-142 HEATER METAL (any ind.) in heating steel to specified rolling temperature in soaking-pit furnaces:

Ignites furnace burners, using torch. Turns valves and dampers of furnace to regulate heat. Assists in straightening and lancing buckles and pile ups in furnace, using bars and oxygen lance. Inspects dampers and sump pumps of furnace to ensure satisfactory operation. Reports operating mechanical or electrical malfunctions encountered in charging or reheating operations. Assists in general clean up. Observes condition and progress of slabs, billets or blooms in furnace. See also definition for term title, 02-160, HELPER (any ind.).

May perform miscellaneous duties such as, bending liners, sharpening bars, offsetting rams, raising and lowering charging doors and spraying refractory clay onto pit linings.

8131-202 OPEN-HEARTH-FURNACE WORKER(iron & steel)

DPT:687

third helper.

GED: 2 SVP: 3 EC: I 3 5 6 7 PA: H 4

Performs any combination of the following tasks involved in operation of open-hearth furnaces:

Mixes and shovels refractory materials onto furnace bottom. Transports additives from bins to furnace, using wheelbarrow. Shovels additives into furnace and ladle. Cleans and reams furnace taphole and removes cold steel from pouring spout, using reaming tools and bar. Sprays slag with water hose. Moves controls to open and close furnace doors. Maintains tools and equipment used for furnace operations. Cleans floor and furnace areas. Operates hoist to position charging chute in front of furnace door. Delivers test samples of molten metal to laboratory.

8131-206 CUPOLA CHARGER(iron & steel) DPT:486

GED: 2 SVP: 2 EC: I 3 6 7 PA: M 4 6

Charges scrap or pig iron, coke, and limestone (flux) into cupola to melt metal for making iron castings:

Proportions materials following definite formula, varying materials according to orders of 8131-146 CUPOLA TENDER (iron & steel). Shovels materials into charging or weighing buckets. Weighs and wheels materials in buckets to door of cupola. Dumps iron, coke and limestone through charging door so that charge in cupola is in alternate layers. Cleans up spilled materials using broom and shovel.

May operate power-driven hopper, conveyor or crane to transfer materials from storage bins to weigh scale and cupola. May make minor repairs and adjustments to charging machine, using hand tools.

8131-210 FURNACE CHARGER(iron & steel)

DPT:665

charger.

GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 4 5

Tends charging mechanism that moves steel shapes, such as blooms, billets or ingots in specified sequence through soaking pit furnace:

Signals crane operator to position steel on furnace skids or conveyor rollers. Moves control levers on panel to advance steel to furnace and to align and load steel into furnace. Observes inside of furnace as projected on television screen or through observation port and moves controls to spot steel in specified locations. Moves controls to discharge steel onto mill rollers. Assists other workers to free blooms and billets stuck on roller line or in furnace and in cleaning furnace bottoms and repairing or replacing defective equipment, using bars, and other hand tools.

8131-299 OTHER METAL SMELTING, CONVERTING AND REFINING FURNACEMEN

This group includes occupations, not elsewhere classified; for example, those who tend charging and discharging mechanisms to move ingots, billets or blooms into and out of heating furnace, preparatory to rolling, drawing or extruding process; smelt Indium concentrate and cast purified metal into anodes to recover Indium by electrolysis; test temperature of molten iron in furnaces to determine pouring time, using optical or thermocouple pyrometers; skim slag from surface of copper in reverberatory furnaces to burn oxygen and prevent oxidation; and heat steel rods preparatory to forging boat or track spikes. Typical examples of occupational titles covered by this residual group definition are:

Billet Pusher(iron & steel; non-ferrous metal)

Indium Recovery Operator(non-ferrous metal)

Pyrometer Man(iron & steel)

Reverberatory-Furnace Skimmer(non-ferrous metal)

Spike-Machine Heater(iron & steel)

8133-METAL HEAT-TREATING OCCUPATIONS

This unit group includes occupations concerned with altering the physical properties of metals or metal objects by heating, cooling or chemically treating, to anneal, harden, temper or relieve internal stresses. Occupations concerned with annealing, hardening or tempering, as incidental tasks, are classified in more appropriate unit groups where their primary functions are emphasized.

8133-110 FLAME-HARDENING-MACHINE SET-UP

MAN(mach., weld. & forg.)

DPT:480

GED: 4 SVP: 6 EC: I 3 5 7 PA: M 3 4 7

Sets up battery of machines which harden or anneal metal objects, by conveying them between rows of gas flames:

Mounts workpiece in fixture, or on arbor, or between centers of machine. Determines flame temperature and heating time cycle according to degree of hardness or annealing required, and metal to be treated. Moves controls to light burners and adjust flame of oxyacetylene, propane, or other gas to prescribed temperature, judging temperature by flame colour. Turns valves to regulate flow of coolant water. Turns setscrews in nozzles to direct flames against specific area of object. Starts automatic feeding or rotating mechanism which moves part through flame. Tests hardness of sample part. Adjusts automatic feeding or rotating mechanism and flame temperature until sample parts meet specifications.

May examine objects under microscope to determine grain size of annealed object. May position and fasten fixture for holding workpiece in machine, using wrenches. May operate flame-hardening or flame-annealing machines as part of regular duties and be designated accordingly; for example,

Flame-Annealing-Machine Set-Up Man

8133-114 HEAT TREATER, ALL ROUND(mach., weld. & forg.) DPT:662
heat-treat operator.
GED: 3 SVP: 6 EC: I 3 5 6 7 PA: M 4 7

Controls one or more heat-treating furnaces and quenching equipment to alter physical and chemical properties of different types of metal objects or parts by methods of controlled heating and cooling, such as hardening, tempering, annealing, case hardening and normalizing:

Determines temperature and time of heating cycle and type and temperature of quenching medium to attain specified hardness, toughness and ductility of metal, using standard heat-treating charts, knowledge of heat-treating methods, equipment and properties of metals. Operates oil, electric, electronic induction, or gas furnaces to heat-treat metal objects, using any of the following methods. 1. Relieves internal stresses, softens and refines grain structure in metals [8133-126 ANNEALER (mach., weld. & forg.)]. 2. Hardens surface of steel objects by carbonizing or immersing in chemicals during heat process and then quenching. [8133-134 CASE HARDENER (mach., weld. & forg.)]. 3. Hardens metal objects by heating and quenching methods, [8133-138 HARDENER (mach., weld. & forg.)]. 4. Imparts toughness and removes strains and brittleness by heating previously hardened metal and by controlled quenching sequence, [8133-142 TEMPERER (mach., weld. & forg.)]. Adjusts furnace controls, observing pyrometer, to bring metal to prescribed temperature. Places items to be heat-treated in racks, trays or baskets and places them on conveyor or loads them directly into furnace. Observes dials and checks controls to ascertain correct functioning of heat-treat equipment during operation. Removes items after prescribed time and quenches in water, oil, brine or other bath, or allows metal to cool slowly. Maintains temperature and strength of quenching media. May test hardness of metal objects treated. May set up and operate die-quenching machine to prevent metal objects from warping during quenching. May direct other workers in slinging loads, loading and unloading metal parts or products and in maintaining heat-treating equipment and work area.

8133-118 INDUCTION-MACHINE SET-UP MAN(mach., weld. & forg.) DPT:480
GED: 3 SVP: 5 EC: I 6 7 PA: M 4 7

Sets up variety of induction machines to harden, braze, anneal or sinter metal objects according to specifications:

Determines frequency of current, time cycle, and induction heating coil required for each job according to work order specifications, knowledge of heat-treating methods and properties of metals. Fastens induction coil and fixture on machine, using wrenches. Positions or fastens part in fixture, and starts machine to harden, braze, anneal or sinter sample part. Tests hardness of sample using hardness tester. Adjusts controls to set frequency of current and automatic timer, judging from colour whether part is heated to specified temperature.

May operate induction machine as part of regular duties, such as vacuum induction or hydrogen atmosphere electric furnaces to pre-sinter or sinter carbide blanks.

8133-122 QUENCHING-UNIT OPERATOR(mach., weld. & forg.) DPT:482
GED: 3 SVP: 5 EC: I 3 4 5 6 PA: M 4

Operates cooling equipment to quench hot metal parts, such as pipes, rods or bars, with water;

Sets stops and guides of quenching unit according to length of parts to be soaked, using wrenches. Adjusts eject arms and pump orifice according to diameter of material, using wrenches and pliers. Sets electric controls of conveyors, eject arms, pumping unit and drainage lift to synchronize transfer and quenching of hot metal. Pushes buttons on control panel to start or stop automatic quenching operation. Observes operation to detect malfunctions, and operates controls manually to quench metal in event of failure of automatic system. Records information such as quantity, grade, size, wall thickness, time and amount of scrap.

8133-126 ANNEALER(mach., weld. & forg.) DPT:582
annealing-furnace operator; conditioning-furnace operator; normalizer.
GED: 3 SVP: 5 EC: I 3 5 6 PA: M 4 7

Controls furnace to heat metal objects to relieve stresses and to soften and refine grain structure:

Charges metal objects directly onto furnace bed or places them on trays, pallets, conveyor or furnace-charger mounted on steel wheels and tracks. Regulates gas and air flow to furnace and ignites burners in specified sequence. Adjusts furnace temperature, observing pyrometer, to heat metal to specified temperature. Sets speed of conveyor for prescribed time cycle or records time that metal is to be removed from furnace. Reduces heat and allows objects to cool slowly in furnace or removes objects from furnace and allows them to cool in open air. Maintains production records of materials treated.

May use specific quenching procedure for cooling when annealing non-ferrous metals. May operate continuous furnace through which objects are passed by means of reels and conveyors and be designated accordingly,

Continuous-Annealing Furnace Operator

8133-130 SOAKING-PIT-FURNACE OPERATOR(mach., weld. & forg.) DPT:562
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: S 4 7

Operates furnace that treats ferrous and non-ferrous metals to specified temperature for rolling, processing or stress relieving:

Sets furnace controls to regulate and maintain temperature between specified limits, manually turning rheostat control knobs. Starts conveyors and opens furnace doors to admit materials, pressing buttons, or signals crane operator to uncover soaking pits and lower materials into them. Measures temperature of product to determine necessity for adjusting furnace temperature or timing cycle, using thermal measuring instruments and charts. Observes pyrometer and adjusts controls to maintain temperature at required level. Removes treated parts from furnace, using crane, or signals crane operator to transfer material to next station. Records time and production data for office control purposes.

May operate roll traverse wheel to process hot slabs, plates or ingots.

8133-134 CASE HARDENER(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 3 4 7

Controls furnace to impart hard skin and tough, ductile core to steel parts, using one of the following methods:

1. Places parts in wire baskets and immerses them in heated chemical bath such as sodium or potassium cyanide (cyaniding). 2. Packs parts in metal boxes filled with carbonaceous material such as, coke, coal, bone, charcoal, or barium carbonate and charges boxes into furnace (carbonizing). 3. Places parts in racks or trays, charges them into furnace and opens valves to circulate carbon rich gas, such as methane, around parts during heating process (nitriding). Adjusts furnace temperature, observing pyrometer, to heat metal to prescribed temperature. Removes steel parts from furnace after prescribed time cycle and quenches them in oil, water or brine, or allows them to cool to predetermined temperature before quenching, depending on metal properties specified.

May test hardness of parts. May degrease or remove scale from treated parts. May be designated according to process used; for example, Carbonizer, Cyanider, Nitrider

8133-138 HARDENER(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 3 4 7

Operates furnace to harden metals and alloys throughout:

Places parts in racks, trays, or baskets and places them on conveyor or loads them directly into furnace. Controls furnace to harden metal objects such as axheads, knife blades, springs, tools and dies. Heats the objects to specified temperature, and quenches them in oil, water, brine or blast of cold air, depending on the limit of hardness of the metal or alloy, to attain certain hardness throughout.

May harden rail ends, using portable electric heater and air quencher. May test hardness of metal objects by means of special instruments. May be designated according to object hardened.

8133-142 TEMPERER(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 3 6 7 PA: M 4 7

Controls furnace to temper metal articles to specifications:
Places previously quenched and hardened metal articles in racks, trays or baskets or loads them directly into furnace. Adjusts furnace temperature, observing pyrometer, to heat metal to specified temperature. Removes metal articles after prescribed time and tempers them by controlled quenching, using brine, water, oil, molten lead, or blast of cold air, as media to remove previously imparted quenching strains and brittleness and to impart toughness to metal.
May temper coil springs by heating, quenching and shot-peening (bombarding surface with steel shots). May retemper automobile springs and apply wax coating for rust proofing.

8133-146 METAL BLUER(mach., weld. & forg.) DPT:685
GED: 3 SVP: 3 EC: I 3 5 6 7 PA: M 4 7

Tends gas furnace that heats metal parts or products to impart blue surface to rust proof and give decorative non-reflecting finish:
Places parts on conveyor or loads them directly into furnace, and covers them with bone chips or chemicals. Closes furnace door and regulates gas valve to adjust furnace temperature. Observes gauge on control panel to ensure prescribed temperature is obtained to heat metal. Sets conveyor speed for prescribed time cycle or removes parts from furnace after specified time. Cools parts in bin or on cooling table. Examines blued metal to determine if shade and colour conform to specifications. Sorts products by type and size and packs them in containers. Cleans blued parts in tumbler machine, using sawdust and cleaning compound, or blows oil and chips from blued parts, using air hose.
May weigh packaged products.

8133-150 FLAME-HARDENING-MACHINE TENDER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4

Tends flame-hardening machine to case-harden metal objects:
Positions and fastens part in fixture, on arbor, or between centers of machine. Presses button on control panel to light burners which direct flames against part, or lights burners manually, and starts automatic feeding or spinning mechanism. Observes machine operation and removes finished part.
May be designated according to part annealed; for example, Flame-Annealing-Machine Tender

8133-154 INDUCTION-MACHINE TENDER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: M 4

Tends electronic induction machine, according to set procedures, to harden, braze or anneal metal objects:
Positions and fastens part in fixture of machine to ensure it is clamped firmly. Presses button on control panel to start current flowing through induction coil to heat part for prescribed time. Tests parts for hardness using pre-set hardness testing equipment.
May load automatic machine by dumping parts into hopper. May change induction coils in machine according to size and shape of workpiece, using hand tools. May adjust dial on variable transformer to compensate for variations in line voltage.

8133-158 JEWELLERY ANNEALER(jewellery & precious metal prod.) DPT:685
GED: 2 SVP: 3 EC: I 3 6 7 PA: L 4 7

Softens jewellery parts for further processing by heat-treating in electric or gas furnace:
Sets automatic controls to specified temperature. Fills steel tray with fittings and places tray in oven, using tongs, or loads belt with fittings and starts oven conveyor. Removes tray or unloads belt after specified time and immerses fittings in water. Pickles, rinses and scrubs fittings to remove oxide and scale by immersing them in chemical and water baths.
May restore malleability to ingots of gold, silver and other metals by heating ingots with bunsen burner or torch and immersing them in alcohol.

8133-162 HEAT-TREATER HELPER(mach., weld. & forg.) DPT:666

furnace feeder; furnace loader.

GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 4

Helps, 8133-114 HEAT TREATER, ALL ROUND (mach., weld. & forg.) in annealing, hardening, or tempering metal objects, by performing any combination of the following duties:
Cleans foreign matter such as scale, rust, or grease, from metal objects, using solvents and wire scrapers. Hangs parts on racks, hooks, or fixture, or places them on handtrucks or conveyors, and charges them into furnace manually or using hoist. Adjusts controls as directed by, 8133-114 HEAT TREATER, ALL ROUND (mach., weld. & forg.) to maintain specified temperature in furnace. Assists in filling, draining and cleaning quenching tanks. Marks or tags parts for identification. See also definition for term title, 02-160 HELPER (any ind.).
May be designated according to heat-treat process performed; for example, Annealer Helper

8133-166 RIVET HEATER(any ind.) DPT:685
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: L 4 7

Tends furnace that heats rivets to specified temperature:
Places specified rivets in gas, oil or coke furnace, or between electrodes in electric furnace. Turns knobs to regulate heat or current of furnace. Removes rivets from furnace when colour indicates they are heated to specified temperature, and throws them to another worker or places them in receptacle, using tongs.
May tend portable coke or electric heating equipment to heat rivets in field. May be designated according to type of furnace tended; for example, Rivet Heater, Electric
Rivet Heater, Gas

8133-199 OTHER METAL HEAT-TREATING OCCUPATIONS

This group includes METAL HEAT-TREATERS not elsewhere classified; for example, those who operate furnaces to evenly heat and cool non-ferrous metal ingots to produce homogenized metal; operate furnaces that blacken aperture masks and rings used in colour picture tubes; set up and operate portable heat-treating equipment to relieve stress in fabricated metal components of boilers; and submit bars used in large electrical coils to a vacuum heat-treating process. Typical examples of occupational titles covered by this residual group definition are:
Homogenizing-Furnace Operator(non-ferrous metal)
Steam-Blackening-Furnace Operator(electronic equip.)
Stress Reliever(struct., plate & ornam. metal)
Vacuum Heat Treater(electric. equip.)

8135-METAL ROLLING OCCUPATIONS

This unit group includes occupations concerned with shaping, reducing the cross-sectional area, and elongating metal pieces by passing them between smooth-surfaced or grooved rotating rolls which exert a continuous compressive force. Includes direct metal rolling support activities and occupations concerned with rolling wire from billets and rods.

8135-110 ROLLING ATTENDANT(iron & steel) DPT:362
GED: 4 SVP: 6 EC: I PA: L 4 5 6 7

Operates electronic devices and equipment (console), to control rolling operations of rolling mill, which reduces steel billets, ingots or slabs into products of specified size, shape and gauge:
Selects prepunched schedule cards for section to be rolled and feeds into card reader. Activates card reader memory bank which interprets schedule card information and stores data in storage unit for response to electronic signal in rolling cycle. Sets selector switches of console for automatic operation of electronic equipment, roll stands, and auxiliary equipment. Moves console controls to advance steel from approach table to mill entry table and through complete rolling cycle automatically, to reduce steel products to specified shape, size, and gauge. Observes from control pulpit rolling irregularities in ingot, such as

pipe, split end, or heat loss, and notifies other worker through intercom system to shear defective parts. Observes rolling operations, dial and coloured light indicators, and other gauges, and manipulates control levers and switches to adjust roll draft, alignment, or mill speed, to correct rolling and tolerance deviations or drift. Stops automated mill and changes to manual control operations on break-down or failure of electronic or mill equipment. Assists or directs mill crew in setup, roll change, maintenance, and adjustment of mill and auxiliary equipment.

May make adjustments or minor repairs to electronic control equipment or devices.

8135-114 HOT-STEEL ROLLER(iron & steel) DPT:462
hot-mill roller.

GED: 3 SVP: 7 EC: I 5 PA: L 4 5 6 7

Operates primary mill to roll hot steel ingots into blooms, slabs, billets, or beam blanks, following rolling orders and using knowledge of steel properties and rolling practices:

Reads rolling order to determine setup, rolling sequences, number of passes required, and draft (space between rolls) for each pass. Sets clearances on guides and rolls, using wrenches and measuring instruments, and starts mill to roll sample ingot. Measures sample for dimensional conformance to specifications, using calipers, tape, and level. Moves levers to regulate draft, as shown by dial indicator, and to control movement of conveyors, water sprays, and mill tables for each pass. Signals soaking pit personnel for ingots as needed. Observes colour of ingot to determine if specified rolling temperature has been attained. Gives directions to workers in duties, such as changing rolls, regulating speed of conveyors, and turning ingots, to obtain product of specified size, shape and quality.

May direct shearing and rolling of blooms into billets and cooling of billets. May be designated according to type of mill operated; for example,

Roller, Billet Mill
Roller, Blooming Mill
Roller, Slabbing Mill

8135-118 ROLL SETTER(iron & steel) DPT:460
roll-pipe setter; roll-tube setter.

GED: 3 SVP: 6 EC: I 3 5 6 7 PA: H 3 4 5 7

Installs and adjusts rolls on sizing, forming, and welding mill to produce pipe or tube of specified outside diameter:

Reads mill schedule to determine size of product to be produced. Selects and installs rolls on mill, using hand tools. Signals crane operator or uses hoist, to remove previous sizing mill from rolling line, and positions replacement mill on line. Sets and adjusts bolts and stops to position rolls on mill, using wrenches and bars. Sets controls to regulate speed of mill. Starts machine and runs mill to produce sample of tube or pipe. Measures outside diameter of rolled product to determine conformance to specifications, using calipers. Inspects product for defects such as scratches, cracks and pits. Adjusts rolls to obtain product of specified dimensions, using hand tools. Disassembles sizing mills removed from rolling line, and stores parts.

8135-122 ROLLING-MILL OPERATOR(non-ferrous metal) DPT:462

GED: 3 SVP: 6 EC: I 5 6 7 PA: M 4 5 7

Operates rolling mill to shape or reduce non-ferrous metal billets, slabs or blooms into plates, sheets, foil, flatwire, and rods of specified dimensions:

Reads rolling order to determine setup and work sequence. Calculates draft (space between rolls) and roll speed to flatten metal to specified dimensions. Adjusts rollers, buffs, and guides, according to size and dimension of workpiece, using screwdriver, micrometer, steel tape and hand tools. Turns valves and observes gauges to regulate flow, temperature, and solution of roll lubricants and metal coolants. Starts entry or roll off tables that feed metal to and from rolls. Starts mill to roll test piece, and adjusts roll tension screws, hydraulic sprays and mill speed to equalize load and obtain product of specified dimensions and finish. Threads sheet on rod through rolls for further reduction, or signals assistant to feed separate sheets or rods through rolls. Inspects first piece for variation from rolling or length specifications. Starts mill for automatic operation, and moves controls to synchronize flow of metal with tandem operations. Examines metal for surface defects; such as, cracks, scratches, curling, splitting or buckling. Measures width and gauge of rolled metal using linear tape and depth gauge.

May set trigger mechanism that activates cut-off die to specified length, by setting and tightening setscrews. May direct other workers in changing rolls, loading and unloading operations. May be designated according to type of machine operated; for example, Reversing-Mill Roller
Tandem-Mill Roller

8135-126 ROUGHING-MILL OPERATOR(iron & steel; non-ferrous metal) DPT:462
bulldogger; rougher.

GED: 3 SVP: 6 EC: I 3 5 7 PA: M 4 5 7

Operates roughing mill roll stands to reduce billets, blooms and slabs to specified dimensions, using knowledge of rolling practices and metal properties:

Reads rolling order to determine setup specifications. Installs rolling equipment; such as, roll stands, guides, bar turners and repeaters on rolling line to obtain appropriate alignment and specified thickness, using hand tools, bars, levers, gauges and sledges. Moves controls to maintain rigidity, and set specified draft between rolls at each stand and pass. Regulates coolant flow, and repairs or adjusts thickness guides, using keys, hammer and calipers. Examines product passing through mill for surface defects, such as scratches and cracks. Verifies gauge of product after each pass, using calipers. Lubricates repeaters and washes screens and filters to remove oxidation and impurities, using oil can and water hose. Gives directives to mill crew in readjusting roll draft and relining guides.

May observe colour of heated metal to determine rolling temperature and start roughing stands. May be designated according to type of mill operated; for example,

Rougher, Bar Mill
Rougher, Hot-Strip Mill

8135-130 COLD-STEEL ROLLER(iron & steel) DPT:482
cold-mill operator.

GED: 3 SVP: 6 EC: I 5 6 PA: M 4 5 6

Operates rolling mill to flatten and reduce gauge of cold steel strip and sheet, according to rolling orders and using measuring instruments:

Reads rolling order to determine setup and work sequence. Turns controls to adjust roll speed, draft, and tension of strip between reels of coiling mechanism. Installs guides, guards and cooling equipment in stands, using hand tools. Starts mill to roll test piece and adjusts roll screws, hydraulic sprays and mill speeds. Moves controls to start production rolling of steel strip. Examines steel for surface defects, such as cracks, scratches and pits. Verifies dimensions of metal for conformance to specifications, using micrometers, thickness gauges, and measuring tape.

May observe flattening process and press buttons to roll metal sheet back after each pass and close pressure rollers accordingly. May calculate space between rolls and roll speed for each mill stand to roll strip to specified dimensions. May direct and signal operator of crane to load rolled sheet on machine apron. May operate mill to temper steel strip and be designated accordingly; for example, Temper-Mill Roller

8135-134 FINISHER(iron & steel) DPT:482

GED: 3 SVP: 6 EC: I 3 5 6 7 PA: M 4 7

Operates roll stands in finishing mill to roll steel objects, such as strips, bars and flats to specified gauge, shape and finish:

Reads rolling order to determine setup specifications. Installs guides on stands, using wrenches, bars and sledges. Grinds guides to obtain specified fit, using portable power grinder. Moves controls and observes dial-indicators and gauges to set roll draft, adjust guides and align material with mill rolls. Observes material leaving leading stand and adjusts controls to obtain specified flatness and straightness, and to eliminate defects, such as cracks and scratches. Measures strip or bar being produced to ensure conformance to specifications, using fixed gauges. Adjusts roll draft when bell signal or fixed gauge indicate material is being rolled off gauge. Assists and directs crew in roll changes and removing or cutting jams from mill.

May catch steel as it leaves lead rolls, using tongs, and feed it into finishing stand, or start carriage that automatically feeds steel into finish rollers. May be designated according to type of product processed; for example,

Finisher, Bar
Finisher, Hot Strip

8135-138 SPEED OPERATOR(iron & steel) DPT:462
 speed regulator.
 GED: 3 SVP: 5 EC: I 5 PA: L 4 5 7

Operates equipment from raised platform of rolling mill to start, stop, and regulate speed of rolls, rollers, conveyors, and edgers to reduce gauge of steel slabs and billets:

Turns master switch and motor-breaker switches to build up voltage of mill motors. Moves levers and switches to set specified roll speeds at each roll stand and signals furnace crew to release slab or billet onto entry conveyor. Observes gauges, tachometers, and products being rolled to determine if specified roll speed, motor load, and tension on product are being maintained. Adjusts controls to regulate rolling speed to prevent looping, warping, or over stretching of product as gauge and temperature of product are reduced and roll draft is changed. Stops motors to shut down mill for repairs or roll changes.

8135-142 PIERCING-MILL OPERATOR(iron & steel; non-ferrous metal) DPT:482
 GED: 3 SVP: 5 EC: I 3 5 7 PA: M 4 7

Operates equipment to pierce billets lengthwise, or shape and enlarge inside diameter of metal tubes:

Selects, positions and adjusts piercing rolls which rotate and shape outside of tube and force center of billet into piercing mandrel, using hoists, wrenches, and measuring instruments. Attaches specified piercing point to arbor to form and control size of internal diameter of tube. Adjusts feed guides, stops, tailstock, and arbor rings, according to size of workpiece, using hand tools. Moves levers and presses buttons to drop hot billet from conveyor into trough and ram it along trough into rollers and into piercing point. Moves controls to withdraw piercing mandrel from billet, and to activate kick-out that drops billet or shells on conveyor for further processing. Measures finished workpiece to verify conformance to specifications, using calipers, fixed gauges and micrometers.

May be designated according to material worked on, or machine operated; for example,

Copper-Billet Piercer(non-ferrous metal)

Seamless-Steel Billet Piercer(iron & steel)

8135-146 ROLLER, SEAMLESS TUBE(iron & steel) DPT:482
 plug-mill operator; tube roller.
 GED: 3 SVP: 5 EC: I 5 7 PA: M 4 7

Sets up and operates machine to form seamless tubing from pierced steel billets:

Installs series of rollers to form specified outside diameter of tubing. Installs plug onto mandrel to form specified inside diameter of tubing. Starts machine and moves levers to push billet into first set of rollers that force billet over plug and into following series of rollers to reduce or expand billet to tubing of required dimensions. Inspects product to ensure conformance to specifications, using micrometers and fixed gauges.

8135-150 SCREWDOWN OPERATOR(iron & steel; non-ferrous metal) DPT:482
 roll spacer.
 GED: 3 SVP: 5 EC: I 3 5 7 PA: M 4 7

Operates electric-screwdown mechanism on reversing rolling mill to set draft (space between rolls) for reducing slabs, ingots or billets to specified thickness, using knowledge of rolling practices and metal properties:

Reads rolling order for dimensions, properties and temperature of product to be rolled. Determines, from experience, and size and grade of product, number of passes and amount of reduction on each pass required to reduce product to specifications. Moves controls to set rolls for each pass according to draft reading on dial indicator. Activates sprays with foot pedal. Inspects, gauges and adjusts rolls to ensure conformance to specifications and to eliminate defects, such as cracks and scratches. Performs other duties, such as assisting in or directing roll changes and repairing or adjusting mill equipment.

8135-154 STRAIGHTENING-ROLL OPERATOR(any ind.) DPT:482
 mangle-roll operator.
 GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates rolling machines to straighten warped or bent metal tubes, plates, bars, rods or sheets:

Places workpiece on reel or loading-platform of machine, and threads end between rolls, manually or with crane. Removes, replaces and adjusts guides and adjusts angle of feed rollers, using hand tools. Sets rheostat to desired roller speed. Turns handwheels or nuts to adjust tension between one or more sets of aligned drive and adjustment rolls. Coats workpiece with light oil to prevent scratching of surface. Pushes button or pulls lever to move workpiece through rolls of machine. Hammers or pries workpiece into alignment, using hammer or pry bar. Inspects workpiece for straightness and handling marks, visually, and using straightedge, micrometer, vernier, feeler gauge and angle gauge. Inserts shims under bulges and repeats process to straighten workpiece to specifications.

May operate automatic clipper or shear to cut workpieces into specified lengths. May be designated according to product straightened; for example,

Bar-Straightening-Machine Operator

Plate Roller

Tube Straightener

Wire-Straightening-Machine Operator

8135-158 GUIDE SETTER(iron & steel) DPT:484
 GED: 3 SVP: 5 EC: I 3 5 6 7 PA: M 2 4 7

Installs and adjusts guides, rolls, and passes on stands of rolling mill, according to job specifications, using hand tools:

Determines installation procedure from rolling specifications, product dimensions, and section of mill to be used for rolling product. Assembles or assists other workers to assemble roll stands, using hammers, wedges, wrenches, and pry bars. Installs and adjusts guides on stands to control passage of product through roll passes, using hand tools. Disassembles previously installed roll stands on mill and installs and aligns new roll stands, using blocks and wedges. Sorts and stores rollers and guides from disassembled stands. Observes guides during rolling to determine if they are functioning according to specifications and adjusts guides to obtain specified performance.

May assist in removing cobbles, blisters or puffiness during rolling operation. May perform final grinding on guides used on rolling stand, to ensure adherence to specifications, using portable grinders.

8135-160 SCALPING OPERATOR(non-ferrous metal) DPT:662
 GED: 3 SVP: 5 EC: I 5 7 PA: M 4 5 6 7

Operates scalping mill to remove oxidation and defects from surface of billets or ingots, preparatory to rolling:

Adjusts scalper blades to depth of cut required and positions holding jaws to width of ingot or billet, using handwheel, setscrews and hand tools. Turns valve to pressurize miller oil cooling system. Lifts metal from skid to entry table, using hoist. Starts lifting table that positions billet or ingot in jaws of machine carriage. Starts machine to make first cut. Releases billet or ingot from carriage and reverses it, using roller manipulators. Repositions metal in carriage for second cut, using button controls. Observes scalped surface to ascertain whether further scalping is required. Stacks scalped metal on skid, using hoist.

8135-162 STEAM-CONTROL OPERATOR(iron & steel; non-ferrous metal) DPT:682
 reversing-mill operator.
 GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Operates steam engine to control single-stand reversing mill and auxiliary equipment to roll heated ingots into blooms, slabs, and billets:

Moves controls, hydraulic levers and switches, to regulate speed, forward and reverse motion of horizontal and vertical rolls, air compressor, water and oil pumps. Observes meters and gauges to determine proper functioning of engine. Adjusts valves, throttles, and switches to ensure specified performance of engine.

May perform repairs; such as, changing cylinders, piston rods, rings and bearings, using mechanic's hand tools.

8135-164 UTILITY MAN, ROLLING MILL(iron & steel;
non-ferrous metal; wire prod.) DPT:684
GED: 3 SVP: 5 EC: 1 5 6 PA: M 3 4 7

Prepares rolling mill for rolling rods, bars, rounds, flats and wire, performing any combination of the following duties:

Assembles stands, rolls, guides and rest bars of rolling mill, using hammers and wrenches. Installs repeaters or tables on rolling line, using hand tools. Grinds surface of repeater guides to ensure smooth passage of steel or drawn wire through mill, using portable grinder. Sorts and stores guides, tools and other mill equipment. Assists machine operators to set up spooling or recoiling equipment for complex or special products.

May cut scrap to charging box size, using scrap shear or torch. May hook crane slings to rolls, mill equipment, scrap or charging boxes, and signal crane operator to position load in specified areas. May remove billets, slabs or ingots piled up in furnace, using rake or tongs and chain.

8135-166 REELING-MACHINE OPERATOR(iron & steel) DPT:482
GED: 3 SVP: 4 EC: 1 5 7 PA: M 4

Operates reeling machine to round out and burnish inside and outside surfaces of seamless steel tubes:

Sets distance between rolls according to size of pipe shell, and positions mandrel support bar between rolls. Installs specified plug on mandrel. Moves controls to push tube along conveyor, through stationary guides, and into rotating rolls that force tube over mandrel. Turns handwheel or moves lever to maintain roll pressure on pipe shell, to smooth surfaces and to round out tube to specified diameter and gauge. Checks dimensions of plug to ensure correct size of pipe, using calipers and rule. Pushes button to activate knockout mechanism to position reeled pipe for next operation.

8135-170 COILER OPERATOR(iron and steel) DPT:682
GED: 3 SVP: 4 EC: 1 3 5 PA: M 4

Operates high speed equipment to wind steel strip into coils as strip emerges from rolling mill or continuous annealing, pickling, or tempering lines:

Moves controls or levers to synchronize coiling machine speed and action of machine guides, gates and rolls with feed tables and conveyors, or rolling mills. Examines strip surface for scale, weld defects, and specified oil coating. Moves controls to transfer coils onto conveyor for automatic bundling and piling.

May cut strip into specified lengths. May cut defects from strip, and cut excess metal from weld, using power shear and weld notcher.

8135-174 JEWELLERY STRIP ROLLER(jewellery & precious metal prod.) DPT:682
GED: 3 SVP: 4 EC: 1 6 PA: L 4 7

Operates rolling machine to roll ingots into metal strips for use in stamping out jewellery blanks:

Positions ingot between pressure rollers. Observes calibrated scale indicator and turns handwheel to set distance between rollers. Moves lever to start machine, and readjusts pressure rollers as needed to reduce ingots to strips of specified thickness. Verifies thickness of strips, using micrometer. Cleans rolls as required.

May anneal ingot to soften metal for further rolling. May set up and operate equipment to slit, flatten, coil, shear or trim strips of metal.

8135-178 MANIPULATOR(iron & steel) DPT:684
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Operates manipulator and entry guide mechanism from raised platform of rolling mill to position ingots or blooms for entry into rolls of mill:

Moves levers to transfer ingot from entrance table onto entrance conveyor, and to align side guards that guide ingot into rolls. Observes rolling process and pushes controls that cause fingers of manipulator to turn ingot after each pass. Assists rolling mill crew in roll changes and repairs, using hand tools.

May assist in making adjustments and in setting-up slabbing mill.

8135-182 ROUGHING-TABLE TENDER(iron & steel) DPT:685
GED: 3 SVP: 4 EC: 1 3 5 6 7 PA: M 4 7

Tends conveyor and stationary table to feed steel blooms, billets, and slabs to rolls for successive passes through roll stands:

Moves levers to position tilting tables in front and rear of roll stand and align steel with roll guides preparatory to feeding steel into rolls, or operates control buttons and pneumatic valve to start and stop drive mechanisms and to open and close guides that feed and guide billets into roughing mill. Starts table rollers that feed steel into rolls for specified number of passes. Aids other workers in making roll changes and adjusting equipment.

May be designated according to type of table operated; for example, Delivery-Table Tender

Tilting-Table Tender

8135-186 TUBING-MACHINE TENDER(iron & steel; non-ferrous metal) DPT:685
GED: 3 SVP: 4 EC: 1 5 PA: M 4 7

Tends machine that rolls metal ribbon into coils and solders seams of coils to form conduit tubing:

Mounts reel of brass, copper, or steel ribbon and reel of soldering wire on machine. Changes dies according to size of tubing required, using hand tools. Feeds metal ribbon and soldering wire into machine. Starts machine that pulls metal ribbon through series of dies to form coil, joins flanged edges of coil, and solders seams of tubing. Measures diameter of tube, using fixed gauge. Removes empty reels from machine.

8135-188 INGOT-BUGGY DRIVER(iron & steel) DPT:683
ingot-buggy-and-cover operator; rail-tractor operator.
GED: 2 SVP: 4 EC: 1 3 5 7 PA: L 4 7

Drives electric car mounted on rails to transport ingots and slabs from soaking pits to rolling mill:

Moves lever controls, in response to arm or buzzer signals, to open and close pit covers and to position car for receiving material from soaking pit. Moves lever to start and drive car to mill approach-conveyor-table. Pulls lever to raise tilting cradle of car and deposit material on table.

May keep records of ingots charged and withdrawn. May operate car by remote control from pulpit.

8135-190 ROLLING-MILL OPERATOR HELPER(iron & steel; non-ferrous metal) DPT:685
GED: 2 SVP: 4 EC: 1 3 5 7 PA: M 3 4 7

Performs the following duties in rolling metal ingots, billets and bars into plates, tubes, and sheets and rods:

Guides, pulls or turns metal rods, ingots or billets on conveyor or tables to, from and through rolls of tube or rod rolling machines, using tongs, overhead cranes, or automatic handling devices. Feeds sheets or plates into carriage or table of rolling machines. Cuts off jagged edges of sheet, using hand or machine shears, and flattens leading edge of sheet with mallet or machine flattener. Tends equipment to return metal to entry side of mill for rerolling, to feed or offbear coils of metal, and extend coils into rollers of mill. Cleans jams, using pry bar, and adjusts guides, using hand tools. Observes rolled metal for defects, such as tears and cracks. Measures dimensions of rolled stock using linear rule and micrometer. See also definition for term title. 02-160 HELPER (any ind.).

May check temperature of heated ingots or billets, using pyrometer. May transfer empty furnace cars to the loading end of furnace, manually. May remove dummy blocks from extruded billet or ingot butts, hammering blocks out, using sledge hammer and dumping recovered block onto table conveyor. May be designated according to product rolled; for example,

Foil Roller Helper(non-ferrous metal)

Sheet Roller Helper(non-ferrous metal)

Tube Roller Helper

8135-194 CATCHER(iron & steel) DPT:684
bar catcher; tongsman.
 GED: 2 SVP: 3 EC: 1 3 5 6 PA: M 4 7

Guides hot steel shapes, such as bars, rods, and sheets, from one set of rolls to another:

Catches end of hot steel with tongs as it comes through first set of rolls and feeds end into next set. Assists in setting and adjusting repeaters, guides and rollers, using hand tools.

May measure length of bars and plates, using scale, and notify 8135-114 HOT-STEEL ROLLER (iron & steel) of deviations from specifications and of defects in material.

8135-198 PLUGGER(iron & steel) DPT:684
piercer plugger.
 GED: 2 SVP: 3 EC: 1 3 5 6 7 PA: VH 4

Replaces plugs used to form inside diameter of seamless tubing in rolling mill machines:

Positions plug in trough of rolling mill, or screws specified plug on end of rolling-mill mandrel, preparatory to forming tube, using tongs or hoist. Removes hot plug with tongs, after tube has been rolled. Immerses hot plug in bosh tank for cooling. Inspects plugs for wear or defects, and determines need for replacement, using fixed gauges.

May move controls to charge and discharge pipe shells from reheating furnace. May throw sand or scale on mill rolls to prevent slippage, using scoop. May assist other workers installing rolls and making adjustments to mill, using wrenches.

8135-202 BED TENDER(iron & steel) DPT:685
hotbed leverman; hotbed tender.
 GED: 2 SVP: 3 EC: 1 3 5 PA: L 4

Tends equipment that transfers rolled steel shapes; such as, blooms, billets, rails, and pipe from processing line to cooling beds:

Presses controls to raise roll stop, start conveyor, and position material opposite specified cooling bed. Pulls lever to start pusher straightedge and dog-chain (series of projections) that shove material off conveyor line onto cooling bed. Moves controls of dog-chain to pull cooled material from bed onto cradle or transfer table.

8135-206 COILER, METAL ROLLING(non-ferrous metal) DPT:685
 GED: 2 SVP: 3 EC: 1 6 PA: M 4 7

Tends coiler that winds metal strips, sheets, or wire into coils as they emerge from rolling mills, slitters, or other machines:

Adjusts coiler guides and rollers according to size of workpiece, using hand tools. Starts machine that automatically winds metal onto reels and observes operation to prevent jams, uneven winding, or wrinkles. Regulates tension of coiler to prevent tearing or stretching of metal. Inspects surface of metal for defects. Binds or straps finished coils to prevent uncoiling using crimping tools. Moves controls to activate hydraulic pusher arm and tilts table to transfer coil onto skid or conveyor.

May be designated by employer according to experience with particular type or trade name of machine, or product coiled.

8135-210 SCALPING HELPER(non-ferrous metal) DPT:686
 GED: 2 SVP: 3 EC: 1 5 7 PA: M 3 4 7

Helps to scalp surface of ingots or billets to remove oxidation and defects preparatory to rolling:

Lifts ingot from skid to entry table of milling machine, using hoist. Stacks scalped ingot or billet on skid. Places wooden or cardboard liners between ingots as they are stacked. Changes scrap boxes. Maintains records of ingots or billets scalped. Examines scalped metal for defects. Performs minor maintenance and cleans work area. See also definition for term title, 02-160 HELPER (any ind.).

8135-214 INGOT CLADDER(non-ferrous metal) DPT:687
cladding assembler; liner assembler.
 GED: 2 SVP: 3 EC: 1 5 7 PA: H 3 4 7

Attaches metal liners to scalped ingots preparatory to rolling into clad sheet or plate:

Positions ingot on cladding conveyor, using hoist. Cleans and scrubs ingot with solvent, rags and stiff brush. Immerses cleaned ingot into

hot water tank to rinse and dissolve detergents, using hoist. Inspects ingot for imperfections, such as pits, cracks, inclusions or rough edges. Removes defects using pneumatic chisel, squeegees or wipers. Selects specified liners from stack and straps them to both sides of ingot, using wire and banding machine. Tack-welds liners to ingot, using electric or gas welder, or binds clad ingot, using steel-strapping machine. Removes and stacks processed ingots, using hoist. May cut wire straps of tack-welded clad ingots, using wire-cutter.

8135-299 OTHER METAL ROLLING OCCUPATIONS

This group includes other metal-rolling workers, not elsewhere classified; for example, those who tend crossing rolling mills to flatten and stretch articles of flatware; tend foil doubling machines that wind two strips of metal on single reel to form one sheet; verify width of first plate rolled on roughing mill to ensure conformance to specifications; and roll aluminum wire from bar stock. Typical examples of occupational titles covered by this residual group definition are:

Flatware Roller(iron & steel; non-ferrous metal)

Foil Winder(non-ferrous metal)

Mill Hand, Plate Mill(iron & steel)

Wire Roller(non-ferrous metal)

8137-MOULDING, COREMAKING AND METAL CASTING

This unit group includes occupations concerned with moulding, coremaking and pouring or pressing molten or powdered metal into moulds to form metal ingots, castings, or die-castings of various shapes and sizes. Activities include: making moulds and cores by hand and machine methods; setting up moulding, coremaking and die-casting machines; operating equipment to melt and cast metal to make ammunition; and assembling and preparing moulds and cores for moulding operations. Occupations concerned with operating furnaces, kettles or other equipment to melt metal for casting, when the melting of metal is an integral part of the casting operation, are classified in this unit group. Other furnace operators are classified in Unit Group 8131, METAL SMELTING, CONVERTING AND REFINING FURNACEMEN.

8137-110 PATTERN MOULDER(non-ferrous metal) DPT:381
 GED: 4 SVP: 7 EC: 1 3 6 7 PA: M 4 7

Casts patterns in non-ferrous metals for use in high production duplicate castings, applying knowledge of metal characteristics, sand moulding, contours of patterns and pouring procedures:

Mixes sand, clay, water and coal to make sand moulds, using wood pattern to form mould impression of metal pattern to be cast. Pours molten aluminum, bronze, or other non-ferrous metal into mould until molten metal reaches predetermined line, using hand ladle. Machines metal patterns to exact dimensions.

May make wood patterns used to form sand moulds in which metal patterns are cast.

8137-114 SAND MOULDER(iron & steel; non-ferrous metal) DPT:381
 GED: 4 SVP: 7 EC: 1 3 6 7 PA: H 3 4 7

Forms sand moulds and cores for production of metal castings, using hand and power tools, patterns and flasks and applying knowledge of variables, such as contours of patterns, moulding and core sands, metal characteristics and pouring procedures:

Positions drag half of pattern and flask on follow board. Sprinkles or sprays parting agent on pattern and flask and positions reinforcing wire in flask. Sifts sand around contours of pattern. Shovels sand into flask and packs in place, using hand ramming tools or pneumatic hammer. Turns drag over and positions cope half of pattern and flask on drag. Repeats moulding operation to make cope. Lifts cope from drag and removes pattern. Wipes edges of pattern and mould with solution to prevent crumbling. Cuts runner or gates and sprue hole into mould and repairs damaged impressions, using hand tools, such as slick, trowel, spoon and sprue cutter. Positions specified cores in drag, and reassembles cope and drag. Moves and positions large flasks,

patterns and bottom board, using hoist or crane. Pours molten metal into mould, using ladle, or signals others to fill mould.

May form and assemble slab cores around pattern to reinforce mould, using hand tools and glue. May form sand cores used in moulds to form hollows in metal castings. May attach sweep and rotate it about spindle until mould impression is swept or scraped to desired shape, or scrape out desired impressions by drawing sweep back and forth along guides of large rectangular floor or pit moulds. May be designated according to type of moulding done; for example,

Moulder, Bench
Moulder, Floor
Moulder, Sweep

8137-118 DIE-CASTING-MACHINE SET-UP MAN(non-ferrous metal) DPT:380
GED: 4 SVP: 6 EC: I 5 6 7 PA: M 4 7

Sets up die-casting machines to cast metal parts, such as automobile trim, carburetor and power mower housings, and electrical and household appliance parts, from non-ferrous metals, such as zinc, aluminum or magnesium:

Lifts and positions die sections into machine, manually or using chain fall, hoist or lift trucks. Secures die sections in place, and adjusts stroke of ram, using hand tools. Connects water hoses to cooling system of die. Preheats die sections with torch or electric heater. Turns valves and sets dials to regulate flow of air or water circulating through die, timing cycle, and operating speed of machine. Starts machine to produce sample casting, and examines casting to verify setup.

May perform maintenance on machine or dies, such as replacing pipelines or hoses, lubricating machine or replacing ejector pins in dies. May dismantle dies for repair by toolroom personnel.

8137-122 MOULDING-AND-COREMAKING-MACHINES SET-UP MAN(iron & steel; non-ferrous metal) DPT:380
pattern setter; set-up man, core room.
GED: 4 SVP: 6 EC: I 5 6 7 PA: M 4 7

Sets up machines that make sand moulds, cores, or cast patterns: Obtains specified patterns from storage and moves them to work station, manually or using hoist or handtruck. Bolts patterns to bed of moulding or forming machine, using wrenches. Adjusts stops, height of squeeze or roll-over mechanism, and height of sand hopper according to size of pattern or core, using hand tools. Starts machine to produce sample, and examines and gauges casting to verify set up and adherence to specifications, using scales and calipers. Replaces worn parts, such as air lines, gas lines and core box vents, using hand tools.

May modify draft angles, fillers and radii to correct errors in piece, using files, electric grinders and abrasive paper. May make templates from blueprints.

8137-126 COREMAKER(iron & steel; non-ferrous metal) DPT:381
GED: 3 SVP: 6 EC: I 7 PA: M 3 4 7

Makes sand cores used in moulds to form holes or void spaces in hollow castings:

Cleans core box with blast of compressed air. Dusts parting sand over inside of core box to facilitate removal of finished core. Partially fills core box with sand, using shovel and by hand. Compacts sand in core box, using hands, hand rammer or pneumatic rammer. Cuts reinforcing wires with shears, bends them by hand and inserts in sand. Fills core box and compacts sand. Inverts core box onto metal plate and lifts box from sand core. Patches cracked or chipped areas on core and smooths core surface, using spoon or trowel. Bakes cores in oven to harden. Assembles core sections by pasting together to form completed cores.

May make cores with special sand and harden cores by blowing carbon dioxide gases onto core or by injecting gas into core.

8137-130 MOULDER, BENCH(jewellery & precious metal prod.) DPT:381
metal moulder.
GED: 3 SVP: 6 EC: I 6 PA: L 4

Cast metal moulds to form jewellery and silverware articles: Forms plaster model, or receives model from stock. Builds sand mould

in flask, using plaster model as pattern. Places flask in furnace, or heats with blowtorch to dry and harden sand mould. Removes plaster model from flask. Melts metal in crucible or furnace and pours molten metal into channel of sand mould to cast metal mould. Opens flask and removes metal mould when metal has hardened, using pliers or tongs.

8137-134 SHOT DROPPER(explosives) DPT:462
pellet maker; shot maker.
GED: 3 SVP: 5 EC: I 3 6 7 PA: L 2 4 5 7

Controls kettles at top of shot tower to melt scrap shot, lead, and lead alloys, and drops mixture through perforated pans down tower to form shot for shotgun shells:

Calculates weights of pure lead and lead alloys to produce mixture of specified antimony content, according to formula. Notifies shot making crew of type and quantity of pigs to load into conveyor. Starts conveyor and moves controls to regulate feed rate of lead and scrap into kettle. Observes pyrometers and adjusts thermostat to maintain kettle heat to bring lead to specified pouring temperature. Positions shot pan of designated size and spreader pan and cup in fixture beneath kettle spout to receive molten metal. Turns crank to regulate molten metal flow from kettle into cup. Observes falling pellets for irregularities, such as incorrect size or shape, indicating clogged holes in shot pan and impurities in lead. Adjusts flow of lead to vary size of pellets, and raises kettle temperature to burn out impurities. Cleans pans by dipping them in kettle to melt lead clogging holes. Shakes sampling of dropped shot through gauging sieve, and estimates production of shot of specified size from percentage of pellets passing through sieve. Dumps cooled pellets into tote boxes. Records production, stating weight of cast pellets and type of alloy.

May dross molten lead in kettle, to remove floating impurities, using ladle.

8137-138 CASTING OPERATOR(non-ferrous metal) DPT:662
GED: 3 SVP: 5 EC: I 3 5 6 7 PA: M 4 5 6 7

Controls pouring station to cast metal into pigs, ingots, bars or billets for further processing:

Turns handwheels, moves levers, aligns delivery pipe or starts pumps to regulate flow of metal from furnace, crucible or ladle into casting trough. Adjusts screw valves at bottom of trough to regulate flow of metal from trough into moulds. Skims slag from surface of cast metal, using hoe. Verifies temperature of metal in trough with pyrometer. Raises siphon or replaces tapping pins to stop flow of metal into trough. Removes sample of molten metal for control analysis, using spoon. Controls cooling conditions of casting by maintaining constant level of metal in moulds and regulating series of valves to spray water against moulds, to produce castings of uniform crystalline structure. Signals crane crew or operates hoist to remove casting from mould. Transports and stocks castings in storage area. Stamps or stencils castings with identifying information, using rubber stamp or hammer and die. Shovels scrap metal into buggy for return to furnace.

May cast lead slugs used to protect rubber or plastic hose during curing process. May trim or buff castings to remove handling marks, using chisel, bar, hammer, band saw or electric buffer. May insert fire clay on end of rod into tap hole to seal furnace. May line trough with asbestos paper when casting aluminum to prevent damage to trough. May be designated according to type of metal cast; for example, Aluminum Caster
Antimonial-Lead Caster

8137-142 CONTINUOUS-CASTING-MACHINE OPERATOR(iron & steel; non-ferrous metal) DPT:662
GED: 3 SVP: 5 EC: I 3 5 6 7 PA: M 4 5 7

Operates equipment to cast continuous metal slabs, rods, tubes or billets for further processing:

Prepares pouring operations by scraping slag from reservoir and aligning reservoir over mould. Preheats reservoir to specified temperature. Cleans mould (trough) using scraper and hose, and sprays or brushes lubricant to facilitate flow of hardening metal. Adjusts propane burners under trough to protect molten metal from oxidation during cooling process. Adjusts oxygen lances to cut cast metal to specified length. Threads graphite die into bottom of crucible that holds molten metal when casting tubes or rods. Places water jacket around die and connects water line. Inserts starting bar into bottom of mould or through die into crucible to provide weld with molten metal.

Inserts metal extension rod through driving rollers and threads it to starting tip. Regulates speed of rollers in trough to draw extension rod, starting tip and molten metal through die in continuous casting process. Signals metal pourer to open ladle to pour molten metal into reservoir. Opens valve on tap hole of reservoir to allow molten metal to flow into trough. Operates control panel to monitor flow of metal into trough, through cooling process and to cutting lances.

8137-146 MACHINE MOULDER(iron & steel; non-ferrous metal) **DPT:682**
machine-line moulder.
 GED: 3 SVP: 5 EC: I 5 7 PA: M 4

Operates machine to form sand moulds used in production of metal castings:

Assembles flask, pattern and follow board on moulding table of machine. Sifts sand over pattern using sieve, and fills flask with sand by opening hopper or using shovel or scoop. Packs sand around pattern contours, using hand tool or pneumatic hammer. Starts machine that compacts sand in flask to form mould, or pushes lever to actuate compacting vibrator. Cuts pouring spout and vents in mould, using sprue cutter and wire, or pushes lever to actuate vibrator to loosen cope half of flask from moulded sand. Cleans pattern during cycle, using air hose. Sprays pattern with parting agent, to facilitate removal, using hand spray. Lifts cope of flask off drag and removes pattern. Cleans cavity of mould, using air hose. Positions cores in drag and assembles cope and drag.

May repair defects such as cracks and broken edges, using hand tools. May pour molten metal into moulds. May operate automatic machine to make sand moulds. May be designated according to type of machine operated; for example,

Automatic-Moulding-Machine Operator
 Machine Moulder, Squeeze

8137-150 CASTER(non-ferrous metal) **DPT:662**
metal caster.
 GED: 3 SVP: 4 EC: I 3 6 PA: M 4 5 6 7

Operates gas-fired furnace to melt non-ferrous metal, and pours molten metal into moulds to form castings:

Weighs specified amounts of ingots or scrap and loads them into furnace by hand or using power hoist. Turns valve to regulate temperature in furnace according to metal being melted. Verifies specified pouring temperature of molten metal, using gauge. Positions and clamps specified mould in holding device. Lubricates sides of mould to prevent adhesion of metal. Dips hand ladle into furnace to obtain sample and forwards sample to laboratory for testing. Removes dross from top of molten metal, using skimmer. Pours molten metal into mould. Removes casting from mould using hand tools, or power hoist, and examines for defects.

May transport metal casting to weigh area, or storage, using fork lift. May be designated according to type of metal cast; for example,

Lead Caster
 Needle and Thread Guide Caster

8137-154 CASTING-MACHINE OPERATOR,
AUTOMATIC(electric. equip.) **DPT:682**
grid caster.
 GED: 3 SVP: 4 EC: I 3 5 6 PA: H 4 5 7

Operates one or more single-or multiple-mould casting machines to mould lead-acid-battery grids:

Loads lead-alloy bars into melting kettle, and lights burners, or switches on electrical heater, to melt alloy and heat moulds to specified temperature. Coats mould with compound, using spray gun, to prevent adherence of alloy. Turns valves, to control flow of alloy to mould and flow of water to mould-cooling sprayers. Starts machine that automatically pours specified amount of alloy into mould, and cools and ejects grids. Inspects parts to detect defects, and adjusts temperature of alloy or moulds when indicated. Skims dross from molten alloy, using hand ladle. Directs workers to scrape off metal adhering to mould to prepare mould for further casting, and to stack moulded grids on pallets.

May operate single-mould machine equipped with press that automatically trims grids. May repair pipe connections.

8137-158 CASTING-WHEEL OPERATOR(non-ferrous metal) **DPT:662**
 GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 4 7

Operates rotating casting wheel to pour molten copper, lead, aluminium or other non-ferrous metals into moulds to form ingots, pigs or anodes:

Moves control lever to rotate wheel and position mould under pouring spout of kettle or furnace. Pulls lever to move slide and start pump, to remove stopper from bottom of kettle or furnace, or to tilt ladle to allow metal to flow into mould. Rotates wheel to position successive moulds under spout and sets rheostat to control pouring speed. Adjusts gas and air flow to maintain temperature of furnace, kettle or melting pot. Turns valves to adjust water and air flow used for cooling and drying cast ingots or anodes. Observes process to ensure that castings are dumped, and that moulds are returned to starting position.

May spray empty moulds with coating to prevent metal from sticking. May skim slag or dross from metal in furnace, using hoe or rabble. May divert stream of metal into bucket, using hose to obtain samples for laboratory. May regulate flow of water in water-cooled mould to solidify molten metal. May stamp and mark ingots or anodes with identifying data, using hammer, punch or automatic stamper. May be designated according to item cast or metal used; for example, Automatic-Anode Caster
 Lead-Wheel Operator

8137-160 STARTING-SHEET MAKER(non-ferrous metal) **DPT:662**
 GED: 3 SVP: 4 EC: I 3 6 7 PA: H 4

Operates melting pot and forming press to produce starting sheets used as cathodes in electrorefining of non-ferrous metals:

Signals operator of crane to charge pot with pigs, or loads pigs into pot, using hoist. Unhooks crane or hoist from pigs, using bar. Adjusts gas burner valves to melt and regulate temperature of metal. Skims dross from pot. Turns wheel to lower drum of sheet-forming machine into molten metal. Adjusts depth of drum to control thickness of sheet, speed of machine and flow of cooling water to control formation of sheet. Feeds beginning end of sheet to shears to be automatically cut to length. Hangs and fastens sheets on metal bar. Clears blockages, using bars and hooks.

May straighten bar on which sheets are hung, using hammer.

8137-162 AMMUNITION CASTER(non-ferrous metal) **DPT:682**
 GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 4 7

Controls automatic equipment to melt and cast lead and lead alloy into cylindrical billets, and extrude billets into wire, or tubes for making bullets, cores or shell detonators:

Starts electric furnace, and adjusts controls to maintain specified temperature and pressure. Charges furnace with lead pigs and scrap of specified alloy, using hoist, or conveyor and elevating platform. Skims dross from molten lead with ladle. Turns wheel to adjust flow of molten lead into mould. Adjusts stroke of billet extractor mechanism, installs extruding dies, and regulates ram speed and flow of water coolant, using hand tools. Threads extruded metal over pulleys into slug-forming machines, or through guide pipes to be coiled in drums. Verifies wire, or tube size with snap gauges and calipers to ensure conformity to specifications.

8137-166 ANODE-PRESS OPERATOR(non-ferrous metal) **DPT:682**
operator, carbon press.
 GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates press that forms carbon into anodes used in metal- reduction pots:

Pushes panel buttons to activate hopper, chain conveyor, cooling chamber belt, and power rolls. Turns valve to regulate flow of water to carbon cooling chamber. Regulates heat in mould to operating temperature, observing pressure gauge and turning valves. Observes signal light on hopper which indicates hopper is filled and carbon mix is discharged into mould. Starts mechanical vibrator or jolting mechanism that packs mix into mould to obtain blocks of required density. Moves levers to synchronize rotation of index table with dropping of ram to press mix into blocks. Takes temperature of compacted mix, using thermometer. Adjusts ram stroke to press block to specified size, using wrench, or compacts mix in mould by placing

weights on top, using crane. Stops press when warning light indicates malfunction or when mould is overheated. Removes rejects from conveyor, using pneumatic ram. Stencils or stamps identifying number on cast anodes.

May fill and level mix in mould manually, using shovel and scraper.

8137-170 BULLET-SLUG-CASTING-MACHINE OPERATOR (non-ferrous metal) DPT:682
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: H 4 7

Operates machine to cast slugs for subsequent swaging into small-arms ammunition bullets:

Drops lead pigs, bars or scrap into melting kettle, manually or using hoist. Moves levers to control fuel-air mixture to furnace and coolant water flow to moulds. Starts pump that forces molten metal through pipes to casting wheels. Observes when moulds are at correct temperature for production casting, and starts machine. Measures slugs, using micrometer, and examines them for defects. Adjusts machine to correct malformation of slugs by adjusting spring tension and shims in mechanisms that close and open moulds, and changing stroke of hammer that knocks slug from moulds. Examines moulds, using straightedge and light, to detect incomplete closure and warpage. Straightens warped moulds, using hand-powered press, or sends moulds to tool shop for correction.

8137-174 DIE-CASTING-MACHINE OPERATOR(non-ferrous metal) DPT:682
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 4 7

Operates die-casting machine to build up and cast parts for automobiles, motors, and electrical and household appliances, from zinc, aluminum, magnesium, and other non-ferrous metals:

Lifts specified die sections onto machine, manually or using chain hoist. Bolts or clamps die sections in position and adjusts stroke of ram, using hand tools. Connects water hose to cooling system of die. Preheats die sections with torch or electric heater. Turns valves to regulate flow of water circulating through die and to control speed of machine. Blows metal fragments from die surface, using air hose, and brushes lubricant into die cavity and onto plunger. Loads metal bar into pot-type furnace or machine reservoir. Hand ladles molten metal into chamber of machine when operating cold chamber machine. Pushes button and moves levers to close and lock dies and to activate plunger that forces molten metal into die. Removes casting after die opens automatically, using pliers or tongs. Observes gauges such as water-pressure, pyrometer, thermocouple-dial and hydraulic-pressure, and makes adjustments. Inspects castings, using fixed gauges.

May line cylinder pot with asbestos to prevent chilling. May dip castings in water to cool them. May remove and stamp cast parts with identifying data.

8137-178 MOULDING-SAND MIXER(iron & steel; non-ferrous metal) DPT:682
moulding-sand conditioner.
GED: 3 SVP: 4 EC: I 5 7 PA: M 4

Operates machine to mix or recondition moulding sands:

Weights or measures specified amount of ingredients, such as used sand, powdered coal, and bonding agents. Shovels sand into hopper of machine, and dumps pails of powdered coal and bonding agents over sand. Sets dials for specified amounts of water, core oil, and other ingredients, such as blackening powder, that are automatically measured and fed into machine. Starts machine and agitators, opens air valves, and turns dials to time mixing cycle. Positions wheelbarrow or bin under discharge end of machine. Removes sample of sand and feels it for moisture and consistency. Adjusts controls and adds ingredients, such as water and binder, to vary mixture according to sampling.

May operate sand cutter to condition sand. May be designated according to purpose for which sand is to be used; for example,

Core-Sand Man

Facing-Sand Man

8137-182 METAL POURER(iron & steel; non-ferrous metal) DPT:664
bull runner; ladle man.
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 4 5 6

Pours molten metal from ladle into moulds to produce castings or ingots:

Preheats ladles, using torches. Examines moulds to see that they are clean, smooth and coated. Signals operator of crane to position pouring nozzle of ladle over moulds, or turns hand wheel to tilt ladle. Moves lever to lift ladle stopper and allow molten metal to flow into moulds to specified height. Skims slag off molten metal, using strainer device, or tilts ladle to dump slag. Replaces defective stoppers and nozzles, using hand tools. Signals workers during pouring operation to obtain sample of metal for analysis. Sprays water on filled moulds and caps moulds. Removes solidified slag from pouring nozzle using bar or oxygen burner.

May direct other workers to shovel additives into ladle or mould to obtain specified type of casting or ingot. May lift crucible out of furnace or cupola, using tongs and hoist, move it to pouring station, and tilt crucible manually in mould. May be designated according to type of ladle used or metal poured; for example,

Pourer, Crane Ladle

Pourer, Crucible

Pourer, Pig Iron(iron & steel)

Steel Pourer(iron & steel)

8137-186 LOST-WAX CASTER(iron & steel; non-ferrous metal) DPT:684
investment caster.
GED: 3 SVP: 4 EC: I 3 6 PA: L 4 7

Cast intricate precision components or jewellery from molten metal, using lost-wax method:

Inserts one or more wax patterns into steel cylinder and packs plaster or ceramic investment around pattern to form mould. Removes air from cylinders, using vacuum hose, to ensure that investment is evenly packed around patterns. Places cylinder in oven for specified time to burn off wax patterns and harden investment. Melts required amount of metal in crucible or furnace. Pours molten metal into cylinder which spins to distribute metal evenly. Breaks or dissolves mould and removes casting. Cleans finished casting by dipping it in acid and water solution or by using shotblast equipment.

8137-190 MOULD SETTER(electric. equip.) DPT:684
casting-machine adjuster.
GED: 3 SVP: 4 EC: I 6 7 PA: M 4 7

Positions moulds used for casting lead for lead-acid-battery parts, such as grids, posts and straps, either for hand casting or machine casting:

Positions and secures mould on bed of machine, using hand tools. Adjusts timing mechanism to co-ordinate flow of lead and coolant to moulds.

8137-194 CENTRIFUGAL-CASTING-MACHINE TENDER(iron & steel) DPT:665
blow-spin operator.
GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 4 5 7

Tends centrifugal-casting machine that casts tubular metal products, such as pipes, brake drums, bushings, or jewellery parts:

Places specified mould on spinning mechanism. Cleans dirt and metal fragments from inside of mould, using brush, water or air hose. Positions and fastens cover on ends of mould. Preheats mould with torch. Starts machine and sprays insulation on inside of rotating mould. Observes molten metal pouring into mould automatically and stops pour when casting is formed by tilting pouring spout, or pours molten metal into mould, using hand or crane ladle. Allows mould to spin for specified time to solidify metal against mould walls. Unfastens mould cover and removes casting, using tongs or hydraulic ram. Signals operator of crane to reload and fill furnace with metal. Assists maintenance crew in repairing machine.

May set machine controls to rotate mould at specified speed. May work at one station on multi-station (indexing-type) centrifugal-casting machine, performing any combination of duties. May operate machine to clean outside and ream inside of pipes. May grind rough areas of pipe, using portable grinder.

8137-198 METAL-FRAME MOULDER(non-ferrous metal)
DPT:664
GED: 2 SVP: 4 EC: I 3 5 6 7 PA: M 3 4 5 6

Assembles and fills metal frames to form moulds used in casting copper:

Assembles metal casting frame on flat car, using bolts and wrenches. Seals frame with fire clay, using trowel. Signals helper to push flat car under pouring spout of ladle. Moves lever to tilt ladle of molten copper, or removes block plugging spout of ladle, and fills frame to indicated level. Pulls lever to lower core attached to hydraulic press ram, to imbed core in molten copper. Turns valve to circulate water through core to cool and solidify copper. Moves lever to raise hydraulic ram and withdraw attached core when mould cools. Dismantles frame, using wrenches. Removes mould, and stacks for further processing, using hoist.

8137-202 METAL-POURER HELPER(iron & steel; non-ferrous metal)
DPT:664
second-pourer; third-pourer.
GED: 2 SVP: 4 EC: I 3 6 7 PA: M 4 5 6

Helps pourer to prepare equipment and pour molten metal into moulds:

Places equipment, such as shovels, plugs, and boards, on pouring platform. Prepares ladles with correct nozzle, using hand tools. Counts moulds and caps to ensure correct number specified for pouring operation. Measures and marks moulds to indicate specified filling heights, using tape and chalk. Weighs specified additives, and transports them to pouring platform, using wheelbarrow. Shovels additives into moulds to produce specified type of metal and to prevent metal from boiling and forming air bubbles inside ingot. Signals crane operator to position hot-tops (covers) or steel places on filled moulds to retard cooling of metal. Pours sample of molten metal into test mould for laboratory analysis. Signals crane operator to remove covers from moulds after metal has solidified. Removes bricks from ladles that require relining, and sets stopper assemblies and nozzles in relined ladles, using bars, sledge, and hand tools. See also definition for term title, 02-160, HELPER (any ind.).

May operate powered capping machine to position and remove mould covers.

8137-206 COREMAKER, PIPE(iron & steel; non-ferrous metal)
DPT:684
GED: 2 SVP: 4 EC: I 3 7 PA: M 4

Makes clay cores around which ferrous or non-ferrous pipes are cast:

Clamps metal rod in bench vises so that it can be rotated. Wraps paper, straw or jute around rod, and secures with twine. Mixes clay with sand, loam and adhesives to form correct consistency. Spreads mixture over wrapping, using trowel. Rotates clay-wrapped rod slowly, and smooths clay manually. Spreads graphite over core and places it in drying oven for specified time to bake clay. Removes dried core from oven and applies alcohol coating to harden core surface.

8137-210 MOULD CLOSER(iron & steel; non-ferrous metal)
DPT:684
GED: 2 SVP: 4 EC: I 5 7 PA: H 4

Cleans and assembles foundry moulds to prepare them for pouring:

Cleans inside surface of sand moulds with air hose. Positions cores in drags, manually or using hoist or crane. Thrusts rod into vent holes to remove obstructions. Fits and secures cope and drag together to form flask, using clamps, wedges, bolts and washers. Applies fire clay to seal joints in flask, using trowel. Places runner cup over pouring hole.

May patch and smooth damaged portions of mould, using spoon or trowel. May assist in pouring metal into moulds. May remove castings from moulds. May repair damaged flask and bottom boards, using saw and rule. May remove damaged crossbars from flasks, using hammer, chisel and hacksaw, and weld replacement, using oxy-acetylene torch.

8137-214 SAND-SLINGER OPERATOR(iron & steel; non-ferrous metal)
DPT:683
slinger operator.
GED: 2 SVP: 3 EC: I 5 7 PA: L 4

Controls sand-slinging machine to pack sand in mould flask (container) by either of the following methods:

1. Engages controls to move machine along tracks and position impeller head over mould flask. Starts machine and moves controls to guide impeller head back and forth to direct flow of sand into container. 2. Starts machine and moves controls to direct flow of sand into flask which rotates on turntable while filling.

May clean and oil machine. May replace worn parts on machine, using hand tools.

8137-218 LEAD CASTER, MANUAL(electric. equip.) DPT:684
GED: 2 SVP: 3 EC: I 3 6 7 PA: H 4 7

Casts lead-acid-battery parts, such as connectors, posts and straps:

Installs mould of specified type on stand, using hand tools. Loads bars, pig or scrap lead into melting kettle. Ignites burner or actuates electrical control to melt lead to casting temperature. Coats mould surfaces to prevent adherence of metal, using spray gun. Ladles molten metal into moulds. Moves lever or removes knock-out pins with mallet, to open moulds and release parts. Inspects parts for defects, and adjusts equipment or alters procedures to correct faulty moulding. Cleans metal from moulds, using brush.

May change mould inserts and adjust knock-out pins, using hand tools and depth gauge. May pour lead into moulds held on radial arms of machine that conveys moulds to worker and discharges castings. May sort, weigh and pile parts in stock.

8137-220 NOZZLE-AND-SLEEVE MAN(non-ferrous metal)
DPT:684
GED: 2 SVP: 3 EC: I 5 6 PA: M 4

Installs, replaces and adjusts nozzles and cylinders (sleeves) of die-casting machines:

Inspects nozzle and sleeve setups along machine line. Disconnects and removes faulty gooseneck (spout) from die-casting machine, using wrenches, chain falls and hoist. Knocks nozzle loose with bar and hammer. Removes plunger from sleeve of cold-shot machine, using wrenches, and pushes defective sleeve from machine. Installs new sleeve by inserting holding pin, setting screw adjustments and taking scale measurements. Drives replacement nozzle into gooseneck. Reinstalls gooseneck in metal pot, aligning nozzle with gate according to scale measurements. Assists other workers adjusting, installing and setting-up die-casting machines. Keeps record of sleeve and nozzle adjustments and replacements.

8137-222 COREMAKER, MACHINE(iron & steel; non-ferrous metal)
DPT:685
GED: 2 SVP: 3 EC: I 7 PA: M 4

Tends machine that makes sand cores for use in casting metal:

Cleans patterns, using air hose or brush. Fills overhead hopper with specified sand mixture, using hoist. Places core box over pattern or die on machine bed or table. Fills and compacts sand in box, using either of the following methods. 1. Pulls lever to blow and compact sand in core box. 2. Fills core box with sand from overhead chute or by using hands or shovel. Starts mechanism that causes table to reciprocate and to compress sand. Tamps sand in core box with hand or pneumatic tool. Removes excess sand from top of core box with straightedge, clamps plate to top of box and moves lever to turn box over. Withdraws core from core box and lifts core from machine.

May position reinforcing wires in core box before filling with sand. May perform one or more of above duties on revolving, multiple station, blower-type or jolting-type coremaking machine. May be designated according to type of core produced, or type of machine used; for example,

Coremaker, Blower Machine

Coremaker, Turn-Over-Draw-Type Machine

Crankcase Coremaker

Jacket Coremaker

8137-224 LIME MAN(iron & steel) DPT:685
lime man, pig-casting machine.
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4

Tends mixing machine to mix lime and water, and sprays mixture on interior of moulds to prevent cast iron from sticking to pig- moulds:

Shovels lime into mixing machine, starts machine, and opens water valve to obtain mixture of specified consistency. Cleans moulds, using air hose. Starts pump of spray gun and sprays moulds with lime mixture. Observes coating on moulds and adjusts spray gun and consistency of mixture to obtain specified coating. Cools hot pigs by opening valve to spray water on pigs. Removes stuck pigs from moulds, using bar.

May assist in removing slag and metal buildup from lips of ladles, using sledge hammer and bar.

8137-226 MOULDER, LEAD INGOT(non-ferrous metal) DPT:685
lead caster.
GED: 2 SVP: 3 EC: I 3 5 6 7 PA: H 2 3 4

Melts lead-antimony pigs and scrap in oil furnace, and casts lead into ingots:

Lights oil burner, using oil-soaked torch, and adjusts oil and air controls to heat furnace to required temperature. Hangs pigs, ingots or scrap over furnace pot, to heat them prior to melting, using hoist. Slides heated pigs into furnace pot, allowing oil to burn off, to avoid accumulation of explosive oil-vapour-air mixture. Stirs molten metal, and skims dross from surface to remove impurities, using ladle. Positions swinging trough over moulds, and opens spout to permit free flow of molten metal into moulds, or ladles metal manually. Turns valves to control flow of coolant water to moulds. Inverts mould when metal is solidified, and knocks ingot loose, using hammer, or releases catch on side of mould that springs ingot loose. Rolls cast ingot to storage, using truck, stands ingot on end, and stamps on identifying information, using hammer and punch.

8137-230 RECLAMATION MAN, METAL(non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 3 6 7 PA: M 4

Tends equipment to remelt and cast non-ferrous metal scrap, dross and skimmings, to form ingots for further processing:

Charges kettle, using shovel or hoist. Observes colour of molten metal and adjusts temperature controls, or turns valve to regulate fuel supply. Stirs and skims molten metal to expel fumes and remove slag, using bar and rabble. Drains ladles or pumps metal into moulds. Dumps castings from moulds and transports products to storage.

May pour molten metal from furnace into vacuum retorts to fume off impurities. May tag or stamp identifying numbers on castings. May weigh castings, dross and slag, and pack castings in containers. May be designated according to metal reclaimed, or item cast; for example, Lead-Reclamation Man

8137-234 SINTERING-PRESS TENDER(iron & steel; non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 7 PA: L 4

Tends mechanical or hydraulic sintering machine that compresses metallic powders into parts; such as, wheels, bearings, gears, filters and rings:

Selects appropriate moulds required to make parts, according to work order card. Adjusts ram stroke and hopper feed valves, using hand tools. Pours metal powder into hopper. Starts press and observes operation. Removes and inspects parts for burrs, nicks and cracks. Weighs parts on scale and measures dimensions to ensure conformance to specifications, using micrometers or fixed gauges. Places compressed parts on tray, stock pan or hand truck, for baking and further processing.

May adjust shuttle mechanism to regulate amount of powder in part. May write identifying information on tag, such as mix or order number, number of parts, and date, and attach tag to tray or pan. May feed parts into coining press to correct distortions created in sinking process.

8137-236 CORE-PIPE EXTRACTOR(iron & steel) DPT:686
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4

Extracts core pipe from interior of tubular castings:

Strikes end of core pipe with sledge to loosen baked sand between casting and core pipe. Inserts end of core pipe through holding block, and secures pipe between jaws set on dolly. Starts machine that pushes dolly along tracks, pulling out core pipe while casting strikes against holding block. Cleans casting, using air hose and wire brush.

8137-238 SOLDER MAKER(non-ferrous metal) DPT:687
GED: 2 SVP: 3 EC: I 3 6 7 PA: M 4

Melts, mixes and refines solder, and pours it into bars:

Mixes tin, lead and refined scrap, and forks, hoists or shovels alloy into furnace melting pot. Sets thermostatic controls or adjusts fuel valves to regulate melting. Skims off dross with ladle. Plunges potato-filled sieve box or treated wooden blocks strung on wire to bottom of molten metal so that steam from charring potatoes, or blocks agitate metal, to bring additional dross to surface. Skims off remaining dross. Ladles or pours new solder into pig moulds or into troughs of solder-making table. Removes cooled metal from moulds and places it on handtruck or conveyor. Cuts bars into required sizes and weights, using power saw.

May tie bars into bundles and pack bundles into metal boxes for shipping or storage.

8137-240 ABRASIVE-WHEEL BUSER(non-ferrous metal) DPT:684
buser.
GED: 2 SVP: 2 EC: I 3 6 PA: H 4 7

Pours molten lead into center of grinding wheels to form bushing:

Selects specified center locator, chamber cutter and arbor according to inside diameter bushing required, or selects and mounts specified sized shaft in lead-casting unit. Screws arbor or shaft into table plate. Switches electric heater or lights blowtorch under pot to melt lead. Positions grinding wheel on table, with shaft, arbor or spindle protruding through center of wheel, and screws top locator to secure in place. Fills area around shaft with molten lead to form bushing, using ladle. Cuts excess lead from around edges of bushing, using mallet, chisel, and hand or power reamer or rotating cutter. Unscrews top locator and lifts finished wheel onto rack or skid.

May insert and position preformed steel, rubber or plastic bushings on arbor or shaft. May coat inside of wheel hub with adhesive and wipe off excess adhesive, using brush or cloth.

8137-242 CASTER HELPER(non-ferrous metal) DPT:684
alloy mixer; mill helper.
GED: 2 SVP: 2 EC: I 3 6 7 PA: H 4

Helps caster to cast and cut pigs to specified dimensions:

Charges kettle containing molten metal with specified alloy ingredients, using shovel. Guides crane-supported mixer into kettle, and mixes contents in kettle. Opens valve permitting molten metal to flow into mould to form pig. Skims slag from surface into dross buggy to remove impurities, using hoe, metal rake, carbon stick or skimming board. Removes pigs from moulds, using crowbar, or sets pins and hooks chain for crane to lift pigs from moulds. Shovels scrap metal into buggy for return to furnace. Moves pigs to storage area, using forklift truck. Cuts pigs to size, using portable electric saw or slitting machine. See also definition for term title, 02-160 HELPER (any ind.). May mark cutting lines on sheet, using chalk, steel square, and tape measure. May melt solidified metal in outlet pipes, using gas torch. May clean equipment, using air-hammer or reamers.

8137-246 CORE SETTER(iron & steel; non-ferrous metal) DPT:684
GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Positions cores in sand mould in preparation for casting metal:

Examines mould and cores for defects, such as cracks and broken surfaces. Places core in mould and closes mould. Verifies spacing between mould and cores, using gauges, and positions metal supports in sand of mould, if required, to prevent core from moving or floating on molten metal.

May roll mould or operate hoist to move mould to casting station.

8137-250 METAL-FRAME-MOULDER HELPER(non-ferrous metal) DPT:684
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 3 4

Helps moulder to assemble and fill metal frames to form moulds used in casting copper:

Assembles metal casting frame on flat car, using wrenches. Measures and marks pouring level on inside of frame to obtain castings of specified weights, using rules, gauges and chalk. Sprays or sprinkles frame and core with bone ash or lampblack to prevent adherence of molten metal. Sprays moulds with steam or hot water to obtain specified temperature. Cleans splashed and partially solidified copper from mould car, using hammer and chisel. Pushes flat car containing assembled frame under spout of ladle, manually. Dismantles frames, using wrenches, removes and stacks moulds, using hoist. See also definition for term title, 02-160 HELPER (any ind.). May fasten plug in bottom of mould with locking pin.

8137-254 CORE EXTRUDER(iron & steel; non-ferrous metal) DPT:685
sand-core extruder; tube coremaker.
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends screw coremaking machine that extrudes sand cores:

Installs specified core tube and conveyor screw in machine, using hand tools. Shovels sand into hopper and tamps by hand. Positions core plate at opening of core tube and starts motor-driven conveyor or manually operates conveyor screw which forces sand through core tube and onto core plate. Breaks or cuts core at core tube opening when core fills plate. Tends oven to bake cores, and removes cores from oven after specified time. Saws cores to specified lengths.

8137-258 CORE-OVEN TENDER(iron & steel; non-ferrous metal) DPT:685
core baker; core ovenman.
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 4

Tends baking oven that hardens and strengthens sand cores used in casting metal:

Loads cores on racks or carts and pushes them into oven. Lights gas or oil fired furnace and turns valves to obtain specified temperature, or sets thermostat and closes switch to heat element in electric furnace. Bakes cores for specified time, and removes from oven. Delivers cores to storage area, or next processing stage, using hand cart or industrial truck.

May clean, spray, or paint cores. May adjust baffle plates that direct flow of heat in oven.

8137-262 DIE-CASTING-MACHINE TENDER(non-ferrous metal) DPT:685
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 4 7

Tends die-casting machine that casts items, such as metal toys and automobile and household appliance parts, from non-ferrous metals:

Loads ingots and scrap into heated reservoir of machine, manually, or ladles molten metal from furnace to machine pot. Turns valves to regulate flow of water or compressed air circulating through dies. Observes pyrometer and turns valve to regulate heat of molten metal in holding furnace or pot. Blows metal fragments from die surfaces, using air hose. Brushes, swabs or sprays refractory compound over die cavities and plunger. Pushes button to close and lock dies and activates plunger that forces molten metal into die cavities. Removes casting after dies open automatically, using tongs, pliers or leather-gloved hand. Inspects casting for defects; such as, pinholes, irregular shape, cracks, bubbles or warpage.

May turn valve to let metal flow into trough from furnace to pot of machine. May measure casting, using fixed gauge. May dip castings in water to cool.

8137-266 SHELL-MOULD BONDER(iron & steel; non-ferrous metal) DPT:685
bonding-machine tender.
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 4

Tends machine that bonds cope and drag together to form completed shell mould:

Turns dials of shell-mould-bonding machine to heat upper pressure plate and set pressure stroke of ram. Positions drag onto lower

pressure plate of machine, using hoist. Fills vibrator pan with bonding agent, using scoop, and pushes button to sift bonding agent onto edge of drag. Positions cope on drag and guides bars into cope and drag holes to determine if cope and drag are properly aligned. Pushes button or pulls lever to push hot plate onto cope to heat and compress cope to drag.

May knock out sprue holes with iron rod. May direct air hose onto mould to blow out loose sand. May tend machine that automatically releases pressure after specified period of time. May assemble cores to drag and cope.

8137-270 SHELL MOULDER(iron & steel) DPT:685
blow operator.
GED: 2 SVP: 2 EC: I 5 7 PA: H 4

Tends machine that makes shell moulds used to produce metal castings:

Starts machine that automatically forms and cures shell. Rolls mould from top rail onto elevator that lowers mould into shell unit and causes blower to impel metered amount of sand into mould. Pulls lever to move oil-heated arbor into mould, and cause rollers to rotate and spin mould until sand mould is cured. Strips cured shell halves from machine and positions on fixture of mould-closing machine. Brushes glue around edges of shell half. Positions remaining shell half on top of lower half and activates ram that exerts pressure on shell until glue has set.

May glue and assemble shell halves by hand. May clamp, wire, or bolt shell halves together. May fill machine hopper with resin-sand mixture, using shovel. May produce cores on shell making machine and be designated accordingly; for example, Shell Coremaker

8137-272 METAL-CHARGE WEIGHER(iron & steel; non-ferrous metal) DPT:587
metal-control man.
GED: 2 SVP: 2 EC: I 3 5 7 PA: M 3 4

Controls type and quantity of metal delivered to furnace room for specified castings:

Places metal shot or strips on scale to weigh specified amount of metal for casting. Cuts bar stock to required lengths, using power saw. Stamps code on bar to indicate alloy and heat number. Delivers metal to furnace room, using handtruck. Keeps work area clean.

May separate returned scrap metal according to alloy and heat number.

8137-274 MOULDMAN(iron & steel) DPT:667
GED: 2 SVP: 2 EC: O 3 6 PA: M 2 3 4 5

Removes steel ingots from moulds after casting and prepares moulds for further castings:

Signals crane operator to lift mould, and knocks out ingot, using hand tools and sledge hammer. Marks casting code on ingot with paint. Examines moulds for cracks and removes dirt and metal particles, using scraper, wire brush and air hose, or oxy-acetylene torch. Mixes mould wash, according to formula and coats moulds, using spray gun. Assists crane operator to hoist and convey hot taps, moulds or ingots by giving signals and by attaching slings or hooks to item to be moved.

8137-278 CASTING-OPERATOR HELPER(non-ferrous metal) DPT:687
billet-man helper; casting-machine helper.
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: H 3 4

Helps in casting metal into pigs, ingots, or billets for further processing:

Pulls mould table over moulding pit, using chain hoist. Lifts moulding heads onto mould table, places distributing basin over moulds and distributing trough between furnace taphole and mould, to prepare pouring station for casting. Positions baffle plates, screens and control pins in trough, using hand tools. Takes sample of molten metal for subsequent analysis. Lines trough with asbestos sheet. Inserts thermocouple into mould, and records temperature of ingot. Skims ingot surface to remove oxide formation, using scoop or ladle. Regulates series of valves to spray water against moulds to produce ingots of uniform crystalline structure. Stencils or stamps identification numbers on ingots. Hooks cable to ingot for removal by crane crew. Removes,

cleans and treats distribution trays and troughs. Cleans working area, using broom and shovel. See also definition for term title, 02-160 HELPER (any ind.).

May buff ingots to remove handling marks, using electric buffer.

8137-282 CASTING-WHEEL-OPERATOR HELPER(non-ferrous metal) DPT:687
GED: 2 SVP: 2 EC: 1 3 4 6 7 PA: M 3 4

Helps operator of rotating casting wheel to cast product, performing any combination of following duties:

Brushes and sprays empty moulds with water and bone ash to prevent castings from sticking to moulds. Chips and removes surplus bone ash, using chipping hammer, bar and vacuum hose. Turns valves to adjust water sprays to cool moulds or to loosen and drop castings from inverted moulds. Pries castings from moulds, using bar. Attaches crane hooks to lugs and signals operator of crane to lift casting from mould. Mixes water and bone ash to specified consistency for coating moulds. Skims slag or dross from furnace, using rake, hoe or rabble. Stamps and marks ingots or anodes with identifying data, using hammer, punch or automatic stamper. See also definition for term title, 02-160 HELPER (any. ind.).

8137-299 OTHER MOULDING, COREMAKING AND METAL CASTING OCCUPATIONS

This group includes moulders, coremakers and metal casters, not elsewhere classified; for example, those who melt, skim and cast aluminum scrap for salvaging; melt and force molten metal through perforated steel plates to produce granular aluminum; pour molten metals into solidifying ingots to compensate for shrinkage; fabricate moulds and cast jewellery, ornamental or ecclesiastical figures and trophies; and install centers and secure mould in pipe machines to prepare machines for operators. Typical examples of occupational titles covered by this residual group definition are:

Billet Man(non-ferrous metal)
Granular-Aluminum Caster(non-ferrous metal)
Ingot Header(non-ferrous metal)
Ornamental Caster(iron & steel; non-ferrous metal)
Pipe-Machine-Mould Installer(iron & steel)

8141-METAL EXTRUDING AND DRAWING OCCUPATIONS

This unit group includes occupations primarily concerned with operating, tending, feeding, or offbearing from machines that draw and extrude metal into primary shapes; such as, wire, pipe, tube, bar and various hollow or solid sections. Occupations concerned with applying insulation to wire or tube, when it is an integral part of the primary shaping process, are classified in this unit group.

8141-110 METAL-EXTRUDER OPERATOR(explosives; non-ferrous metal) DPT:362
extrusion-press operator.
GED: 3 SVP: 6 EC: 1 5 6 PA: M 4 5 6 7

Operates extrusion press to shape hot billets into products, such as bars, tubing, structural shapes, wire and rods:

Arranges work according to type and size of metal, auxiliary equipment and availability of tooling. Installs dies, mandrels, containers, heating coils, press tools, extrusion heads and run-out bridging, using hand tools and hoist. Adjusts controls and gauges, according to size of die, pressure and extrusion speed required. Turns valve to fill hydraulic system storage tanks. Inspects water lines to ensure flow from high pressure pumps to extrusion press. Sets furnace controls to heat billet to specified temperature, and sets shears to cut extrusion to desired length, using hand tools. Rolls cool billet from pallet to hydraulic charger of induction furnace, using tongs. Removes billet from furnace when colour indicates specified temperature, and guides it along extrusion press conveyor onto press bed, and into billet container. Moves controls to start ram that positions billet into press container, and squeezes it through die. Regulates rate of extrusion to prevent metal rupture and adherence of metal to container walls. Starts press run-out table and butt shears to guide extrusion from

press, and to trim flash. Pulls extrusion along conveyor to racking table or runs wire over guide pulleys to take-up reel on winder. Sprays or swabs die with lubricant and caustic, and oils blocks of mandrels. Records data, such as crew time, number of billets used, extrusion defects and items processed.

May be designated according to product extruded or metal processed; for example,

Lead Extruder(explosives)
Wire Extruder(non-ferrous metal)

8141-114 ROD DRAWER(iron & steel; non-ferrous metal) DPT:662

draw-bench operator.

GED: 3 SVP: 5 EC: 1 5 PA: M 4 5 6 7

Sets up and operates draw-bench machine to draw metal rods into specified shape and diameter:

Determines size of mandrel and die required from work ticket, and requisitions specified tools. Positions and secures die on diehead, using hoist and hand tools. Moves levers to set drawing speed according to type and size of material drawn. Inserts pointed end of rod through die and pushes end into holding jaws on dolly. Sets automatic lubricating mechanism to facilitate drawing or swabs rod, using oil-soaked brush. Moves control that automatically forces and pulls rod through die. Examines surface of finished workpiece for defects, such as pits and scratches. Measures rod to verify conformance to specifications, using template, rule, calipers and micrometers. Replaces worn dies when rod deviates from specifications, using hand tools.

May actuate shearing mechanism to cut rods to specified length.

8141-118 TUBE DRAWER(iron & steel; non-ferrous metal) DPT:662

tube-reducer operator.

GED: 3 SVP: 5 EC: 1 5 PA: M 2 4 5 6 7

Operates tube drawing-machine to reduce extruded tubing to specified diameters:

Positions and secures specified drawing die in diehead, and plug die on plug rod, using hand tools. Centers plug die in opening or exit of drawing die. Loads tube over plug manually or activates automatic loading mechanism. Presses switch to advance mandrel in position or fastens tube in cross head chuck. Sets stopper on carriage at specified distance to allow tube to trip and fall onto conveyor. Pushes tapered end of tube through drawing die. Adjusts lubricant flow in jaws of die to prevent breaks and scratches. Moves controls to start carriage that grips and pulls tube through die. Examines finished tubing for defects, such as scratches, pits, cracks, die marks and dents. Measures cross-sectional dimensions with fixed gauges and micrometers to verify conformance to specifications. Adjusts wall thickness by altering position of mandrel, using hand tools. Places fibre rings at intervals on tube to prevent damage when falling in run-out conveyor. Cleans die and mandrel using oil, rags and brushes. Keeps record of work performed.

May cut tube to specified length, using power table saw. May chamfer ends of tube, using file. May apply colour code, stamp and tag drawn tubes.

8141-122 WELDING-ROD-EXTRUDER OPERATOR(wire prod.) DPT:662
GED: 3 SVP: 5 EC: 1 7 PA: M 4 5 6 7

Operates extrusion press to extrude, coat with flux or metallic paste, bake, mark, and cut welding rods:

Selects, positions, aligns, and bolts specified coating (extruding) nozzle, spacers, wire guides, abrasive brushes, cutters, and marking wheels to set up machine to form rods of specified diameter and length, using hand tools. Places slugs of compressed flux into feeding chamber on welding rod extrusion head. Places boxes of specified wire core on tilter, and pulls lever to dump cores into wire feeder. Pulls lever or presses button to set conveyor speed and extruding pressure. Starts machine that automatically coats and extrudes wire to form rod of specified diameter, and cuts it to length. Observes cores conveyed through wire feeder, past coating nozzle in extrusion head, past abrasive brushes and cutters, and into ovens to detect malfunctions. Examines welding rods for defects. Measures diameter of rod and concentricity of coating with fixed gauges. Presses buttons to alter pressure of ram in feeding cylinder or speed of wire feeder, and turns screws to adjust coating nozzle, or position wire guides, spacers, and brushes to eliminate splits, scores and burrs on cut ends. Varies

extrusion pressure or speed of conveyor, or repositions coating nozzle to vary diameter of rod.

May adjust controls to maintain specified temperature in ovens. May assist in machine repair.

8141-126 WIRE DRAWER(jewellery & precious metal prod.; wire prod.) DPT:662
wire-drawing-machine operator.
GED: 3 SVP: 5 EC: I 6 PA: L 4 5 6 7

Operates machine to draw wire or rod through one or series of dies to reduce their cross-sectional dimension:

Determines set-up procedures from specifications supplied, such as size of wire, number of passes, and amount of reduction required. Lifts coil of wire onto feed reel, using hoist, tapers end, and threads wire through die and straightening rolls. Attaches end to winding reel. Coats wire with lubricant to facilitate drawing. Starts machine and observes operation. Inspects and measures drawn wire to verify dimensions, tensile strength and electrical resistance, using wire gauges, micrometers and resistance testers. Cuts defective sections, using wirecutters. Places full reel at feeding position, and bare reel at winding end, adjusts or changes die for next pass, and repeats operation until wire is drawn to size specified. Replaces worn dies, using hand tools.

May weld end of coils, using butt welder. May be designated according to size or shape of wire drawn, or material processed; for example,

Fine-Wire Drawer

Tungsten-Wire Drawer(wire prod.)

8141-130 SHEATHING EXTRUDER(wire prod.) DPT:662
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 5 6 7

Operates extrusion press to encase electric wire, cord or cable in rubber, plastic or lead sheath:

Bolts specified dies, guides, and guide holders in extrusion head of press, using hand tools. Clamps roll of rubber strip on spindle of machine, and threads strip into hopper-feeder, or fills hopper with plastic chips, or fills melting pot with lead billets. Sets temperature control of press according to type of material to be extruded. Loads spool of wire on reel of machine spindle or payout stand, using hoist. Threads wire or cable through machine and around take-up reel, or threads cable through die and cooling chamber, and fastens end to take-up reel. Starts machine and adjusts controls to regulate speed of wire travel, pressure of hydraulic ram, temperature of extrusion die, flow of metal, and pressure of water spray in cooling chamber to ensure sheath of uniform thickness. Guides lead-sheathed or rubber-covered wire through trough of water to cool coating slowly and evenly, or through trough of powdered talc or soapstone to prevent wire from sticking together when spooled. Clamps wire ends in electrodes of electric welder, turns on current, and holds brazing rod against heated wire tips to form continuous wire lengths. Measures diameter of product with micrometers and calipers to ensure conformance to specifications.

May be designated according to machine operated or material sheathed; for example,

Continuous-Vulcanizing-Machine Operator

Wire Sheather

8141-134 METAL POINTER(iron & steel; non-ferrous metal) DPT:682
GED: 3 SVP: 3 EC: I 5 PA: M 4

Operates machine that points or tapers end of tubes or rods to allow insertion in drawing die:

Changes squeezing die according to size of tube or rod to be drawn, using hand tools. Fills oil reservoirs, and opens valves to lubricate stock and die. Loads feeder, using hoist. Inserts end of tube or rod into die and starts machine to taper or reduce diameter of stock. Removes processed material, manually. Inspects and measures shaped ends to ensure conformance to specifications, using fixed gauges. Keeps record of type, number, and size of shaped material.

8141-138 DRAWER HELPER(non-ferrous metal) DPT:684
GED: 2 SVP: 4 EC: I 5 PA: M 4

Helps drawing-machine crew to set up, operate and maintain machines that draw metal tubes, rods or wire, by performing any combination of the following duties:

Obtains tools and dies from tool room, using handtrucks. Lifts, positions, secures and adjusts die, dieheads and plug onto machine, using hoist and hand tools. Places workpieces onto machine table, manually or using hoist. Moves lever to activate die carrier. Lubricates workpieces to facilitate drawing, using oil-impregnated cloth or brush. Cleans die after each pass, using air hose. Removes ejector block, and puts on table, using tongs. Moves draw-bench in position, using hand crank. Stacks drawn workpieces, according to specified procedure, and attaches tubes to crane, using straps and hooks. Makes metal, wood or fibre shims for use around draw-benches, using hand and power tools. Reconditions heads of metal stamps, using wire brush, grinder and files. Cleans and rustproofs tools used at draw-bench, using vapour blasting cabinet. See also definition for term title, 02-160 HELPER (any ind.).

May weld broken mandrel rods and ends, using butt welder. May be designated according to product drawn; for example,

Rod-Drawer Helper

Tube-Drawer Helper

Wire-Drawer Helper

8141-142 CABLE INSULATOR(wire prod.) DPT:685
GED: 3 SVP: 3 EC: I 5 PA: M 4 7

Tends machine to wind insulating material, such as tape, yarn, paper, asbestos or cloth around electric wire and cable:

Loads reel of wire or cable onto machine spindle, manually or using hoist. Threads wire or cable between metal and felt cleaning strips, through tank of liquid adhesive and through taping mechanism. Fastens wire or cable to take-up reel. Winds end or ends of insulating material around wire or cable, and starts machine. Observes automatic wrapping of material around wire or cable to detect broken or loose wrapping, bulging, uneven winding of wire or cable on reel, and to ensure proper tension on tape. Stops machine to repair breaks, adjust guides, and replenish supply of insulating material and liquid adhesive. Forms continuous wire or cable by clamping ends to be joined in electrodes of brazing torch, turns on current, and holds filler rod to heated ends or butt welds ends together. Measures wire or cable, to determine if insulation meets specifications, using micrometer. Wraps paper around full wire or cable reels, attaches identification tag, and lifts reel from machine, using hoist.

May operate machine equipped with winding device to wrap protective metal strip over insulation. May thread insulated wire through melted paraffin and polishing wipers to make insulation waterproof. May be designated according to insulating material applied, or type of machine operated; for example,

Laminating-Machine Operator

Paper-Wrapping-Machine Operator

8141-146 WELDING-ROD-EXTRUDER TENDER(wire prod.) DPT:685
GED: 3 SVP: 3 EC: I 7 PA: M 4 7

Tends machine that simultaneously extrudes carbon rods or forms welding rods coats core (wire) with flux or metallic paste, and , marks and cuts them into specified lengths:

Positions feeding cylinder containing metallic paste or flux over extrusion head of machine, and fills pot of marking device with paint. Starts and observes machine as cores are automatically conveyed through wire feeder, coating nozzle in extrusion head, and past abrasive brushes, cutters, and marking wheels. Examines welding rods for defects. Presses button to alter pressure of ram in feeding cylinder or speed of wire feeder to correct defects in formation of rods.

May measure welding rods with fixed gauge, and turn screws to adjust coating nozzle to obtain specified diameter and concentricity of rod. May adjust abrasive brushes that remove flux from ends and center of coated rod at cutting point. May adjust controls to maintain specified temperature when extruding carbon rods.

8141-150 WIRE-DRAWER HELPER(jewellery & precious metal prod.; wire prod.) DPT:684
GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Helps operator of wire drawing-machine that reduces the cross-sectional dimensions of wire, and welds ends of wire to form a continuous coil:

Assembles dies on machine, using hand tools. Lifts reel of specified wire or bundle of rods onto spindle of floor stand, using hoist, and cuts tie bands, using shears. Straightens and squares ends with hand or foot cutter, and secures ends in welder. Welds ends of wire to form continuous roll, using butt-welding machine. Smooths weld to diameter of wire, using grinder or abrasive cloth. Threads wire around tension roller and through reducing dies. Fastens end of threaded wire to spindle of take-up reel. Unloads reel of processed wire from machine, using hoist. Inspects wire for defects, such as uneven spots, pits and broken welds. See also definition for term title, 02-160 HELPER (any ind.).

May verify size of wire drawn, using micrometers or fixed gauges.

8141-154 METAL-EXTRUDER-OPERATOR HELPER(non-ferrous metal) DPT:686
GED: 2 SVP: 2 EC: I 5 6 7 PA: M 4 7

Performs any combination of the following duties to help in the extruding of non-ferrous metals:

Sets marker on delivery table to stop extrusions at specified length, using hand tools. Pulls cable to activate saw that cuts extrusion when marker is reached. Separates billet stub from dummy block (steel cylinder positioned between press stem and billet to prevent stem entering billet) to complete extrusion cycle, using air hammer. Immerses dummy block in water and places in press chute for re-use, using tongs. Throws billet stub in metal container for return to furnace, using tongs. Sprays front face of die with graphite solution to prevent adherence of extrusion in die, using air spray gun. Inspects extrusions to insure conformance to standards. Keeps work area clean. See also definition for term title, 02-160 HELPER (any ind.).

8141-158 SHEATHING-EXTRUDER HELPER(wire prod.) DPT:686
GED: 2 SVP: 2 EC: I 3 6 7 PA: M 4

Helps to extrude lead sheath around rubber hose to promote uniform curing of hose:

Locks lead billet into clamp of press-loading arm. Swings loading arm into position over chamber of press, and releases clamp. Depresses pedal to start windup mechanism and guides lead-covered hose onto stock drum. See also definition for term title, 02-160 HELPER (any ind.).

May push lead billet, suspended from overhead monorail, into clamp of press-loading arm, and remove conveyor hook from billet after clamp has been closed. May roll filled stock drum to curing area.

8141-162 WELDING-ROD-EXTRUDER HELPER(wire prod.) DPT:686
wire charger.
GED: 2 SVP: 2 EC: I 5 PA: H 4

Helps in operation of welding-rod extrusion machines, performing any combination of the following duties:

Observes boxes of wire cores for specified size, places on tilter, and pulls lever to dump cores into wire feeder hopper. Places slugs of compressed flux into feeding chamber on welding rod extrusion head. Trims slugs, using knife to remove crust, and fits them into extrusion cylinder. Assists other workers to clear oven of jammed rods. Records data, such as temperature and mix for each batch of rods. Cleans machine. See also definition for term title, 02-160 HELPER (any ind.).

8141-166 CABLE-INSULATOR HELPER(wire prod.) DPT:687
GED: 2 SVP: 2 EC: I 5 6 PA: H 4 7

Helps in operation of extrusion press to insulate electric cable, performing any combination of following duties:

Moves rubber strips from rubber mill to extruder machine, using hand truck. Feeds plastic pellets or rubber strips into hopper of extruder machine that sheathes cable with insulation. Winds adhesive tape around cable ends to waterproof it during insulation. Guides sheathed

cable onto take-up reel as it emerges from extruder. Clamps fittings onto cable ends, and lowers reel into autoclave, using hoist. Connects air hoses and clamps autoclave cover in place. Turns valves to equalize autoclave pressure to prevent distortion of rubber sheath during curing period. Removes reel from autoclave onto payoff spindle of stripping machine. Adjusts slitting knife of stripping machine according to thickness of lead-sheathed cable, and threads cable beneath knife and spreader attachment. Feels stripped cable for lumps as it emerges from stripping machine and removes lumps with sandpaper. Keeps log of cable stripped. Transports reel of cable to continuous vulcanizing machine. Cleans and stores printing wheels, changes ink and refills supply tank. See also definition for term title, 02-160 HELPER (any ind.).

May be designated according to task performed; for example, Reel Tender

Spooler and Coiler

8143-PLATING, METAL SPRAYING AND RELATED OCCUPATIONS

This unit group includes occupations concerned with treating the surface of metal stock materials or products by such processes as electrolysis, dipping in molten metal, chemical baths, spraying (metal on metal), anodizing, bluing, tinning, plating, galvanizing or metallizing, to apply decorative, protective or other coatings.

8143-110 JEWELLERY COVERER(jewellery & precious metal prod.) DPT:381
GED: 3 SVP: 6 EC: I 6 7 PA: L 4 7

Covers metals, such as tin, zinc, brass and nickel with strips of gold or silver preparatory to making jewellery articles:

Cuts strips of precious metals, such as gold or silver, to size of base metal to be covered, using hand shears. Cleans and smooths surfaces to be joined, using emery wheel, borax or flux solution. Places solder on each side of base metal and positions precious metal on solder. Positions assembled unit in screw press, and squeezes metals together to exclude air. Brushes borax paste on joints to prevent oxidation. Places unit in gas furnace and regulates temperature to solder precious metal covering on base metal. Observes heating to determine when metals have been soldered. Removes soldered unit from furnace to cool. Pickles, rinses, sands or brushes cooled article to wipe off impurities and impart partial lustre.

May be designated according to covering metal used; for example, Gold Coverer
Silver Coverer

8143-114 ELECTROPLATER, METAL(metal stamp., press. & coat.) DPT:481
GED: 4 SVP: 5 EC: I 3 4 6 7 PA: M 4 7

Controls plating equipment that deposits metal covering on objects to provide protective or decorative surfaces, or to rebuild worn surfaces:

Fills plating tank with required acid and salt solution. Immerses and hangs anodes or bags of plating metal in tank on positive terminal. Lights burners or turns steam valve to heat solution to specified temperature. Scrapes and brushes articles to remove impurities and prevent flashes or burns. Paints or tapes areas of articles not requiring plating. Places components in fixture, jig, rack or barrel. Cleans objects by immersing in cleaning and rinsing baths. Dips or brushes non-metallic objects with metal solution to form an electrically conductive base coat. Lowers barrel or suspends rack or jig on bus-bar (negative terminal) of plating solution. Estimates amount of current needed and time required to plate object according to size, plating solution and thickness of deposit required. Controls flow of current from anode to cathode, causing metal to be deposited on object. Lifts objects at intervals to inspect progress of plating. Removes objects from plating tank, and tests thickness of plating deposit with micrometers, calipers or plug gauges. Dips and rinses objects in steam and clear water. Dries objects with cloth, tumbles them in rotating sawdust barrel, or hangs them to dry.

May strip paint from objects by immersing in acid. May burn chrome on metal parts, such as dies and tools, to maintain, protect or build them up. May direct other workers in racking, cleaning or dipping

objects in tank. May be designated according to objects plated or solution used; for example,
Filament Coater
Nickel Plater

8143-118 CYLINDER PLATER-GRINDER(mech. equip., n.e.c., metal stamp., press. & coat.) DPT:681
GED: 3 SVP: 5 EC: I 6 7 PA: L 3 4 7

Electroplates rotogravure printing cylinders and plates with coating of copper and chrome, and polishes them to specifications, using grinding machine:

Immerses cylinder in cleaning bath, using chain hoist. Removes cylinder and places it in copper sulphate plating solution for prescribed period of time to cover it with copper. Removes cylinder from plating vat, rinses in water, and fastens it between centers of grinding machine, using hand tools. Selects and fastens abrasive wheel onto spindle of machine. Starts machine and turns handwheels to bring abrasive wheel into contact with surface of cylinder, and to engage automatic feed. Measures dimension of cylinder surfaces during grinding and polishing operation, using micrometers to obtain required precision. Removes finished cylinder from machine and places it in rack.

8143-122 PICKLER OPERATOR(any ind.) DPT:662
electrolytic-cleaner operator.
GED: 3 SVP: 5 EC: I 6 7 PA: M 4 5 6 7

Operates controls of pickling or electrolytic-cleaning line to remove dirt and oil from coils of metal strip and wire, and shears coil to specified dimensions:

Turns valve to add acid or caustic solution to processing tanks and shovels or directs helper to shovel inhibitor into tanks to obtain baths of specified concentration. Installs and adjusts guides, pinch and leveler rolls, and side shears on processing line, according to specified dimensions of coils to be cleaned, using hand tools. Adjusts rheostat to synchronize speeds of rolls and reels. Moves controls to regulate speed of coil through line, to shear coil on each side of weld or stitch, and to remove coil from take-up reel. Threads strip of metal or wire through pinch and tension rolls, and loops end on take-up reel. Verifies dimensions of coils, using micrometer and measuring tapes. Examines surface of coils to verify removal of dirt, oil and scale, and cuts out defects, such as torn edges, holes and pinch marks, using shears. Tests concentration of solution in baths, using titration test equipment, and adjusts processing line controls to ensure conformance to specifications.

May be designated according to type of line operated or work performed; for example,
Electrolytic De-Scaler
Galvanizer Cleaner

8143-126 COATER OPERATOR(metal stamp., press. & coat.) DPT:682
GED: 3 SVP: 5 EC: I 3 5 7 PA: M 4 7

Controls automatic coating machines to deposit and bake protective or decorative coating of paint, vinyl, plastic, or metal on metal plates, sheets, strips, or coils:

Turns screwdown mechanism to set distance between coating brushes and rolls and to adjust transversal bar, to control thickness of coating, using hand tools. Measures and sets stops and guides on automatic feeder and conveying equipment according to dimensions of product to be coated, using rule and wrenches. Lights pilot light of gas oven and sets temperature of drying line. Turns controls to regulate speed of feeding metal and flow of chemicals that maintain specified viscosity of solution. Loads feeder with sheets, strips, or coils, manually, or using hoist. Fills degreasing reservoir with solvent to remove grease and other residue before coating. Observes gauges and moves controls to regulate brake tension. Turns valve to control spray of water in quenching process. Starts machine and examines product for defects such as air bubbles, uncoated surfaces, scratches, pit holes, and paint blisters, and adjusts setup.

May stitch and staple metal strips together to form continuous strip. May cut sections from coated metal and inspect coating thickness and gloss, using electronic gauges and meter. May perform impact test to evaluate coating properties, using impact tester and scribes. May be designated according to object coated for example,

Roll Coater
Sheet Dipper

Strip Coater

8143-130 ELECTROGALVANIZER(metal stamp., press. & coat.) DPT:382
electrogalvanizing-machine operator.
GED: 3 SVP: 5 EC: I 3 6 7 PA: H 4 7

Operates continuous multistrand electrogalvanizing and heat-treating machine to coat steel strip or wire with zinc or cadmium:

Mixes solutions according to specifications. Fills cleaning, pickling, galvanizing, and rinsing tanks. Charges furnace with gas or coal to melt zinc and prepare for galvanizing. Threads reels of wire into machine or suspends metal strips on tank bus-bar. Moves controls on rheostat and generators to regulate movement of strand between reels, plating tanks, and coils, to control thickness of coating, and to regulate temperature of leadpot, cleaners, picklers, and plating tanks. Performs such tests as titration of solution, Rockwell tests of hardness, dip coating tests, and tests of butt-weld, and adjusts equipment to attain production specifications. Records test results on daily inspection sheets. Inspects visually and with micrometers for specified coating, washing, and alignment of strands. Resets and changes combs when changing width and number of strands. Changes anodes and recharges leadpot at specified intervals.

May place galvanized steel strips or wires under salt-spraying machine to determine coating thickness by measuring length of time required for salt to break through coating. May be designated according to galvanizing metal used; for example,
Cadmium Galvanizer
Zinc Galvanizer

8143-134 CORROSION-RESISTANT-METAL SPRAYER(metal stamp., press. & coat.) DPT:482
GED: 3 SVP: 5 EC: B 5 6 7 PA: H 2 3 4 7

Controls portable flame spray equipment to spray corrosion-resistant coatings on objects such as plates, structural shapes, bridges, smoke stacks and water and storage tanks:

Mixes materials, such as aluminum or zinc metal paste, catalyst and compounds according to job specifications. Cleans and roughens surface of object to be coated, with blast of abrasive-laden compressed air. Selects nozzle to accommodate size of wire to be sprayed and screws it into place on metallizing gun. Inserts wire to be sprayed into rear of gun and through feed rollers and nozzle. Connects hoses from gun to air compressor, tanks of oxygen, and fuel gas, such as acetylene or propane. Turns knobs to synchronize speed of wire feed, air pressure, flow of oxygen and fuel to specifications computed from data charts. Ignites gases to melt wire, and activates control handle to release compressed air which atomizes and sprays melted metal onto workpiece. Directs spray over surface of workpiece in definite pattern, to obtain coating of specified thickness as indicated by electromagnetic or thickness gauges, or amount of wire used. Cleans metallizing equipment, using cleaning compounds.

May rig or erect scaffolding. May flame-spray non-metallic objects, such as glass or plastics.

8143-138 METAL-SPRAY OPERATOR(metal stamp., press. & coat.) DPT:682
flame-spraying-machine operator; metallizer operator.
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Operates spray equipment and machine tools to build up worn or damaged parts or to bond protective and decorative coatings on metal objects:

Washes surface of object to be metallized with solvent, or places article in furnace, or heats with torch to remove impurities, such as grease and paint. Sprays sizing material to facilitate adherence of metallizer. Positions workpiece into holding fixture of conveyor or into engine lathe to undercut and groove surface. Selects and screws nozzle on gun, and positions it at specified distance from workpiece, according to material size and contours. Connects hoses from gun to air compressor and tanks of fuel gases. Sprays metal or other material on object by one of following methods: 1. Positions and clamps metallizing gun to engine lathe. Threads wire into rear of gun and through feed rollers and nozzle. Turns knobs to synchronize speed of wire, air pressure and flow of fuel. Installs gears in lathe and turns knobs to synchronize rotating speed of chuck and movement of carriage with rate of spray. Ignites gases to melt emerging wire at nozzle and presses button or pulls trigger to release compressed air which atomizes and sprays molten metal onto workpiece. 2. Pours

specified powder of metal or other material, such as ceramic, into hopper mounted on metallizing gun. Synchronizes feeding rate of powder and flow of gases, according to type of powder. Sprays and fuses particular coatings by heating with torch or in heat-treating furnace, and cooling objects slowly to prevent cracking. Inspects and measures workpiece, before, during, and after metallizing to ensure exact thickness of metal applied, using caliper, rule, micrometers and gauges.

May roughen and clean surface of workpiece, using sand-blasting equipment and pneumatic hammer. May operate portable gun to fill cracks or holes, and apply coating to restore flat, or irregular, damaged or worn surfaces of objects. May be designated according to type of equipment used; for example, Thermospray Operator

8143-142 ELECTROLESS PLATER(metal stamp., press. & coat.) DPT:484

GED: 3 SVP: 4 EC: I 7 PA: M 4 7

Coats small steel valve parts with nickel plate, using non-electric dipping process:

Mixes solution and fills dip tank with nickel salt solution. Sets controls to keep tank at specified temperature. Fills basket with parts to be plated, and immerses first in cleaning bath and then in plating tank. Determines processing time according to thickness of plating required. Removes parts when process is completed. Gauges parts frequently with micrometers to ensure that specified tolerances are maintained. Adds plating solution or refills tanks, as necessary, to complete plating process.

May heat-treat plated articles to give them longer wear and corrosive resistance. May repair and replace liners of plating tanks.

8143-146 ELECTROPLATER, PHONOGRAPH MATRICES(metal stamp., press. & coat.) DPT:684
matrix plater.

GED: 3 SVP: 4 EC: I 4 5 PA: L 4 7

Electroplates lacquer disks (master) to produce matrices used as stampers on phonograph record press machines, and produces stampers from mould (sensitized metal record):

Places lacquer disk in automatic spray machine to sensitize (produce electrical conducting surface) by spraying with silver solution. Hangs sensitized disk in nickel or copper baths to form negative master matrix of lacquer disk. Adjusts controls and observes ammeter, dials and gauges to ensure that solutions and electric current flowing through solutions are maintained as specified. Removes plated disk from plating bath after specified time, and washes and dries it, using hot water. Removes metal disk (original or negative) from lacquer disk, using circular cutter. Polishes back surface of metal disk with hand sanding machine and centers and punches hole in matrix, using punch press. Shapes edges, using forming fixture, and cleans surface to prevent adhesion in subsequent plating processes, using steam jets. Produces stamper by sensitizing negative, plating negative to form mould (positive disk), sensitizing mould, and plating mould. Verifies plating accuracy by checking dimensions of original, moulds and stampers, using precision measuring instruments. Cleans anodes and hangers, and replaces spent anodes to maintain plating baths in efficient operating condition. Maintains record of stampers processed. May prepare plating solution by adding specified amounts of ingredients.

8143-150 GALVANIZER, HOT DIP(metal stamp., press. & coat.) DPT:685

dipper; galvanizer.

GED: 3 SVP: 4 EC: I 3 6 7 PA: M 4 7

Tends cleaning and galvanizing equipment to clean and coat iron and steel products with zinc for protection from corrosion:

Suspends metal objects such as pails, shelving, water boilers and tanks from conveyor hooks or hoist or places them in wire baskets. Immerses objects in pickling and washing solutions to clean surfaces of scale and foreign matter. Lowers objects into tank of ammonium chloride or other flux to protect surface from oxidation and facilitate coating. Dips metal objects into tank or kettle of molten zinc, by hand or using hoist or conveyor, to coat them with zinc. Removes objects from tanks after specified time. Places objects such as nuts and bolts in centrifuge, and starts machine to cool objects and remove excessive coating. Places objects such as shelving into water tank to cool. Inspects galvanized products for even and complete coating, and

returns defective items for reprocessing. Adjusts controls to maintain specified temperature in molten zinc and cleaning solutions. Adds coating metal and chemicals to maintain specified levels and mixtures in cleaning, dipping and fluxing tanks.

8143-154 SHERARDIZER(metal stamp., press & coat.)

DPT:685

GED: 3 SVP: 4 EC: I 3 5 PA: M 4 7

Tends sherardizing tumbler furnaces and related equipment to coat steel objects with protective coating of zinc:

Lights and adjusts gas burners of pot to melt zinc. Fills pot with slabs of zinc. Tips pot of molten zinc into vat of water to form zinc flakes. Retrieves zinc flakes from bottom of vat, using long-handled shovel. Weighs specified amount of flaked zinc and ammonium chloride (flux), using platform scale. Dumps flakes and flux into sherardizing hopper. Lights and adjusts gas burners of tumblers and drying drum. Adds specified amount of cob meal or sawdust to drying tumbler. Dumps boxes of unheated objects into tumbler, using electric hoist. Starts machine and sherardizes objects according to specifications. Inspects objects to ensure complete coating. Starts separator and conveyor, and regulates tumbler that dumps articles into separator to free parts stuck together, and drops others onto conveyor that passes through water-filled cooling pits and into drying drum.

8143-158 WIRE-COATING TENDER, METAL(metal stamp., press. & coat.) DPT:685

GED: 3 SVP: 4 EC: I 3 6 PA: M 4 7

Tends one or more machines equipped with series of tanks to coat wire with corrosion resistant material such as tin, zinc, or lead:

Lifts and mounts coils of wire on feed reels. Threads end of wire through series of guides, rollers, wipers, and tanks and secures end to rewind reel. Turns valves to heat coating material to molten consistency and set specified temperature of fluxing, cooling and cleaning baths. Moves controls to start machine, set tension on wire and adjust speed that wire feeds through tanks. Measures finished wire to ensure uniformity of coverage using micrometer or gauges. Adjusts machine settings to regulate thickness of coating. Adds coating metal and chemicals to maintain specific levels and mixtures in cleaning, dipping and fluxing tanks.

May weld ends of wire together, using butt-welder, to maintain continuous wire coating operation. May be designated according to type of coating material or type of wire coated; for example, Lead Coater Wire Tinner

8143-162 ANODIZER(metal stamp., press. & coat.) DPT:485
white-metal-corrosion proofer.

GED: 2 SVP: 4 EC: I 5 7 PA: L 4

Tends anodizing equipment to provide corrosion resistant surface to aluminum objects:

Selects holding racks according to size, shape and number of objects to be anodized. Wires, clips or bolts objects onto rack, to secure them, manually or using wrench. Immerses rack in series of cleaning, etching and rinsing baths to remove dust, grease and dirt. Positions objects in anodizing tank by suspending rack on tank bus-bar. Computes amperage and voltage required, using conversion chart. Adjusts rheostat to regulate flow of current. Removes objects from tank after specified time, rinses objects, and immerses them in bath of hot water or dichromate solution to seal oxide coating firmly on surface. Hangs objects on racks to dry.

May immerse objects in dye bath to colour them for decorative or identification purposes. May inspect objects for colour conformity, by moving reflection meter over surface and reading meter dial, or by comparing colour with sample of finished product. May be designated according to anodizing process used; for example, Clear Anodizer Colour Anodizer

8143-166 ELECTROLYTIC-STRIPPING-TANK TENDER(metal stamp., press. & coat.) DPT:685
stripper.

GED: 2 SVP: 3 EC: I 3 4 6 7 PA: M 4 7

Tends electrolytic stripping tank to remove metal coating from objects: Loads tumbling barrel or basket, or hooks objects on metal rack. Starts

tumbling barrel and sprays with steam and cold water, or immerses basket or rack in hot cleaning solution and rinsing baths to remove grease and dirt. Lowers rack, basket or tumbling barrel into electrolytic tank filled with sodium cyanide solution, manually or using chain hoist. Connects positive charge (anode) to rack, basket or barrel. Moves controls on rectifier to flow current from objects to positive charge, causing coating on objects to decompose into solution. Turns valves to regulate temperature and level of liquid in tank. Turns controls to set timing cycle and to regulate flow of current through solution. Dips rack, basket or barrel loaded with stripped objects, into rinsing tank, manually or using hoist. Tests strength of cleaning and stripping solutions, using hydrometer. Adds chemicals to solution to maintain specified concentrations.

May immerse stripped objects in oil bath to impart rustproof coating. May be designated according to type of stripping tank tended; for example, Chromium Stripper
Nickel Stripper

8143-170 ELECTROPLATER, PRODUCTION(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 3 EC: I 4 5 6 7 PA: M 4 7

Tends plating equipment to coat metal objects electrolytically with copper, chromium, nickel or other metal to build up, protect or decorate surfaces:

Dips components in cleaning solutions, or brushes them with detergent and water, or places objects in mesh container and immerses them in cleaning solution. Places components in fixture, jig, rack or perforated barrel and immerses them in plating solution. Sets timer for specified plating time and turns on electric current, or starts rotation of barrel. Observes meter and turns dial to maintain specified current in plating solution. Removes plated components and immerses them in rinsing tank. Examines components for plating defects. Dries plated objects by methods, such as tumbling in sawdust-filled box or directing blast of air. Adds water or other materials according to specifications to maintain mixture and level of cleaning, rinsing and plating solutions. Cleans plating and cleaning tanks.

May immerse objects in non-electrolytic solution of gold or silver to plate them by flash-immersion method. May replace anodes and cathodes of plating equipment. May be designated according to plating method or metal used; for example,

Plater, Barrel
Plater, Chromium

8143-174 FIREARMS FINISHER(metal stamp., press. & coat.) DPT:685
browning processor.
GED: 2 SVP: 3 EC: I 3 4 7 PA: M 4 7

Tends equipment that imparts decorative brown-black colour, and hard, corrosion-resistant surface to gun barrels:

Mixes solution of acids and metallic salts, according to formula. Brushes or sponges solution onto exterior of barrels. Places barrels on conveyor that carries them through electrical drying and preheating oven into steam chamber where controlled temperature and humidity promote oxidation. Rinses barrels in boiling water, and holds them against wire or fibre brush wheel to remove loose rust particles and produce satin finish. Repeats rusting and brushing cycle until colour of barrel conforms to specified standards. Swabs browned barrels with rust-preventing oil, using rag or sponge.

8143-178 METAL DIPPER(metal stamp., press. & coat.) DPT:685
oxidized-finish plater.
GED: 2 SVP: 3 EC: I 4 6 7 PA: M 3 4 7

Immerses metal parts in tanks containing chemical solution to oxidize and impart a rustproof, lustreless, or decorative finish:

Moves controls to maintain temperature, flow and composition of liquid. Dips articles by one or more of the following methods: 1. Loads conveyor that automatically dips articles. 2. Loads wire basket and starts power hoist to lift and dip basket, or immerses basket in tank manually. 3. Hooks or bolts articles on taped or rubber-covered metal racks, and hangs racks on bus bar of tank for specified time. Removes racks from tank, and dips them in successive baths to clean articles and neutralize solution effects. Removes excess coating with rag or brush. Tests quality of solution, using chemically treated paper,

colour charts or other devices. Adds water or chemical to tank to bring solution to standard.

May tend centrifugal drier to dry and remove excess coating. May operate tumbling barrel to dry articles in sawdust. May sand or wet-buff dipped articles to impart smooth, satin finish, using revolving compound-impregnated cloth wheels. May be designated according to metal used in plating solution; for example,

Bright-Copper Coater
Chrome-Satin Finisher
Tin Coater

8143-182 TUMBLING-MACHINE TENDER(metal stamp., press. & coat.) DPT:685
lubricating-machine tender.
GED: 2 SVP: 3 EC: I 5 PA: M 4

Tends tumbling machine that sprays lubricating solution on parts, such as cartridge cases and detonators, and dries them preparatory to forming operations:

Trucks parts from forming operations. Empties containers of parts into hopper, or into tumbling barrel, manually or using hoist. Closes and clamps door of tumbler, and turns handwheel to regulate spray of lubricating solution. Reads gauges and adjusts steam valves or electrical controls to maintain specified drying temperature. Starts machine and lets drum turn for prescribed period, to lubricate and dry parts. Positions empty container at discharge chute or under opening of barrel, to receive dried parts. Removes filled containers, using handtruck.

May be designated according to parts processed; for example,
Case Oiler-and-Dryer

8143-184 ELECTRO-FORMER(metal stamp., press. & coat.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Mixes electrically-conductive solutions and sprays, brushes or smears solution on non-conductive objects for electroplating:

Measures and mixes quantities of silver solution, salt, sugar and nitric acid, according to formula, using scales and mixing glasses. Tests mixture, using laboratory equipment. Deposits mixture in containers or in spray tank. Positions objects, such as baby shoes or plastic moulds on work table, or positions lacquer disks on spindle of turntable in spraying booth. Sprays, brushes, or smears objects with cleaning and other solvents to prepare them for coating. Rinses objects in clear water. Sprays, smears or brushes electrically-conductive silver coating solution on objects.

May place objects, such as pre-recorded lacquer disks in spraying machine that automatically cleans and sprays surface with silver solution. May dip items, such as baby shoes or plastic moulds, in successive baths to clean and render them electrically conductive. May be designated according to method and conductive agent used; for example,

Silver-Spray Man.

8143-186 PICKLER-OPERATOR HELPER(any ind.) DPT:686
GED: 2 SVP: 3 EC: I 6 7 PA: M 4 7

Helps operator to clean coils of metal strips and wire by feeding metal through electrolytic cleaner:

Sets specified spacing between tension regulating rolls. Adjusts wipers, brushes, and feed guides, using hand tools. Places metal coil in feed-out reel, manually or using hoist, and feeds leading edge of coil into rollers. Moves controls on automatic arc or butt welding machine to lock and weld trailing edge of processed coil to leading edge of coil on feed-out reel to form continuous strip or wire. Stacks processed coils on skids. Assists in threading strip through cleaning tanks, manually. Cuts out defects or samples, using shears. Prepares and inserts markers in processed coils. See also definition for term title, 02-160 HELPER (any ind.).

May tend wiping station of galvanizing tank to wipe excess coat and smooth surface of wire, by feeding wire under pressure between two asbestos cloths.

8143-190 METAL-SPRAY TENDER(metal stamp., press. & coat.) DPT:685

GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 4 7

Tends spraying equipment that cleans, sprays, coats, and bonds protective or decorative coatings to metal objects:

Loads objects on conveyor, or fastens them in fixture. Places articles in sandblast or shotblast cabinet, or sets wheelabrator controls to regulate speed of conveyor and grit feed pressure to clean and roughen objects. Preheats objects for spraying, in furnace, or using oxyacetylene torch or metallizing gun. Sets controls on panel to regulate conveyor speed, rate of wire feed, powder or zinc spray, and flow of compressed air and fuel gases. Ignites gases to melt wire and presses button or pulls trigger to release compressed air which atomizes and sprays molten metal onto workpiece. Directs spray over object to apply coating of specified thickness.

May clamp soft-soldered-sprayed workpieces together, such as radiator fins and tubes, and place in heating furnace to melt solder coating and bond pieces together. May dip objects in acid bath to clean them. May be designated according to object sprayed, or type of metal used; for example,

Clutch-Plate Sprayer(mech. equip.; motor vehicle)

Conduit-Piping Sprayer(any ind.)

Solder Sprayer(any ind.)

8143-194 VACUUM-METALLIZER TENDER(metal stamp., press. & coat.) DPT:685

GED: 2 SVP: 2 EC: I 3 7 PA: L 4

Tends vacuum metallizing equipment that deposits decorative or protective coating of specified metal on metal, glass or plastic objects:

Hooks or clamps articles onto rack. Positions pieces of coating metal over heating filament on rack. Pushes or positions rack in vacuum chamber, manually or using hoist. Connects gear to motorized jig that rotates rack inside chamber. Closes door and turns handles to seal chamber. Starts booster and high vacuum pumps and observes dials to obtain specified state of vacuum in chamber. Pushes button to heat filament which vaporizes coating metal and deposits it as film on metal objects. Turns off electric current after specified time and turns handwheel to permit air to enter chamber. Opens door, removes rack, and lifts coated objects onto truck or dolly.

8143-198 PLATING-ROOM HELPER(metal stamp., press. & coat.) DPT:686

GED: 2 SVP: 2 EC: I 4 6 7 PA: M 3 4 7

Helps operator or tender involved in cleaning, coating, galvanizing, plating or sherardizing metals, performing any combination of the following duties:

Fastens metal objects to hooks or plating racks, or places objects in baskets or barrels for immersion in cleaning, plating or rinsing solutions. Carries articles between conveyors. Dips objects in cleaning solution. Immerses objects in plating or galvanizing solutions, and suspends them from cathode bar. Removes objects from hooks, baskets or racks and examines them for defects, such as rough spots, thin plating, flashes and dirt. Dries articles by methods such as, tumbling in sawdust-filled barrel or box, placing in oven or centrifugal drier, or hanging up to air-dry. Packs objects in boxes or cartons for shipping. Chips built-up plating metal from racks, using hammer or compressed-air vibrator. Coats racks with shellac, paint, or wraps them with rubber tape. Replaces damaged clips or hooks on racks. Skims oxide spelter ash and foreign materials from surface of molten metal in plating tanks. Adds water or chemicals, according to specifications, to maintain mixture and level of cleaning, rinsing and plating solutions. Adjusts temperature valves to maintain heat at required level. Changes, replenishes or replaces anodes in plating tank, or adds zinc slabs in melting pot for galvanizing or sherardizing. Cleans work area. See also definition for term title, 02-160 HELPER (any ind.).

May be designated according to worker helped; for example,

Galvanizer Helper

Sherardizer Helper

8143-299 OTHER PLATING, METAL SPRAYING AND RELATED OCCUPATIONS

This definition includes platers, metal sprayers and related workers, not elsewhere classified; for example, those who tend cataphoresis coating equipment to recoat heater wires in electron tubes, clean metal articles, prior to plating, using vapour degreaser, attach and detach aluminum extrusions from anode racks, tend grit-blast machines to clean and smooth surfaces of metal articles, preparatory to plating, spoon dross from galvanizing or tinning tanks, and spray heat-resistant material on inside of articles. Typical examples of occupational titles covered by this residual group definition are:

Metal Cleaner(metal stamp., press. & coat.)

Production Helper(metal stamp., press. & coat.)

Skimmer(metal stamp., press. & coat.)

Sprayer(metal stamp., press. & coat.)

8146-INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, METAL PROCESSING

This unit group includes occupations in inspecting, testing, grading, and sampling work, as described under the term titles, 02-170 INSPECTOR (any ind.), 02-430 TESTER (any ind.), 02-150 GRADER (any ind.), and 02-330 SAMPLER (any ind.), concerned with quality-control activities in metal processing.

8146-110 HEAT-TREATING INSPECTOR(metal fab., n.e.c.)

DPT:281

GED: 4 SVP: 7 EC: I 3 5 6 7 PA: M 4 7

Inspects parts and assemblies before and after heat treating for conformance to specifications:

Examines parts for cleanliness and previous inspection clearances. Observes heat-treating processes, reading pyrometer and other control dials at specified intervals to determine that proper temperatures, and soaking and cooling times are maintained. Examines processed parts for conformance to specifications, using hand tools and precision measuring instruments. Stamps approved items and writes rejection notices and re-work orders on parts not meeting specifications. Enters inspections results in log book.

May operate equipment to determine hardness of parts and thermal treatment required to process parts as specified on work cards.

8146-118 TENSILE STRENGTH TESTER, METAL(iron & steel; non-ferrous metal)

DPT:381

metal tester, physical.

GED: 4 SVP: 6 EC: I PA: L 4 7

Measures tensile strength, ductility, or other physical properties of metal specimens, following a prescribed series of operations on various types of testing machines:

Determines tensile strength on tension-testing machines. Measures dimensions of specimen with scales and micrometers, and records measurements. Screws or clamps article in holders on machine. Clamps extensometer onto specimen and connects wire from extensometer to automatic stress-strain recorder. Turns handwheels or moves levers to apply tension to specimen at specified rate. Notes reading of indicator dial on control panel of machine, or observes stress-strain curve (curve obtained by plotting applied tension against resultant elongation) being drawn by recorder to determine yield point and tensile strength of article. Removes pieces of broken article from machine, fits them together, and measures amount of elongation. Makes simple calculations of values, such as unit tensile strength, and percentage of elongation, using tables. Records readings and calculations on special forms. Measures ductility of sheet-metal specimens in sheet-metal testing machine. Operates magnetic testing equipment to detect fractures and surface defects. Positions parts in dipping chamber of machine containing suspended iron oxide solution. Starts current inducing a magnetic field to attract and accumulate iron oxide particles at defective points. Determines weight and uniformity of metal coating on articles, using stripping solution, gas evolution apparatus, and analytical balance.

May test specimens for plasticity and compression. May measure hardness of specimens.

8146-122 COMBUSTION TESTER, FURNACE(iron & steel) DPT:381

combustion technician.

GED: 4 SVP: 5 EC: I 3 5 6 7 PA: L 4 7

Measures performance of open hearth furnaces and boilers to provide process control and efficiency analysis information, using testing instruments:

Performs air infiltration tests on open hearth furnaces to detect leakages, using gas analysis equipment. Takes combustion, moisture and pressure measurement tests at various stages of operation to provide process control information, using pyrometer, dew point apparatus and gas analysis equipment. Tests waste gas system of furnaces and blooming mills to detect leaks. Investigates utility losses, such as gas and water leaks. Performs minor repairs on test apparatus, using hand tools. Compares obtained readings with calibrated standards to test accuracy of recording devices. Assists in calibrating boiler control system, using gauges.

8146-126 METAL PROCESSING INSPECTOR(iron & steel; non-ferrous metal) DPT:381 GED: 3 SVP: 6 EC: I 3 5 6 7 PA: M 3 4 7

Inspects metal products, such as blooms, bars, ingots, rods, plates, extrusions, forgings, sheets and strips, for conformity to customer's specifications, using testing and measuring instruments:

Verifies dimensions and tolerances of metal products, using measuring instruments, such as ruler, micrometer, vernier, calipers and gauges. Examines product for flatness, straightness or roundness, and defects such as cracks, slivers, scars, wrinkles, inclusions and discolourations. Outlines defective areas, using chalk or paint. Conducts hardness, heat resistance, pickle, electrical, immersion and weight of coating tests, using upset hammers, hardness testing machines, heating furnaces, verniers, calipers and micrometers. Records variations from dimensional specifications, type of defect, test results, and materials scrapped or salvaged. Establishes porosity range of production sheet and intrusion ingots, and determines grain size on direct casting, to ensure conformity to customer's specifications, using ultrasonic testing equipment, scalping and dye-check method. Cuts test sample from products. Inspects printed stock and packaged materials and products for conformance to printing, packing, labelling and shipping procedures. Reports inspection results to machine operators or supervisor.

May obtain samples of metal for laboratory analysis. May be designated according to product inspected or stage of processing; for example,

Axle Inspector(iron & steel)

Cold-Mill Inspector

Finishing Inspector

8146-130 SAND TESTER, FOUNDRY(iron & steel) DPT:381 GED: 3 SVP: 5 EC: I PA: L 4 7

Tests foundry sand to determine its suitability for making sand moulds or cores:

Collects samples of sand mixes used for making moulds and cores in iron-casting foundry, and compresses sand into sample piece, using sand rammer. Determines properties of sand samples, such as moisture content, permeability, compression and shear strength, clay content, and sand-grain size and distribution, using sand-test equipment, such as moisture meter, permeability meter, sand-strength tester and sieve set. Records test results and rejects unusable sand mixes.

May perform similar tests on ladle lining refractories. May test quality of incoming materials, such as cereal or core oils to be used in sand mixes. May cut, grind and polish test plugs and sample castings for microscopic examination of metal structure by laboratory personnel.

8146-134 WIRE INSPECTOR(wire prod.) DPT:384 tester and inspector, wire. GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Inspects and tests coated or uncoated wire for such properties as hardness, size, cross sectional shape and tensile strength:

Reads written specifications, or receives oral instructions and determines work aids required and inspection procedures. Tests wire for elongation and tensile strength by inserting wire in various testing devices, such as compression, torsion, bending, and hardness testing machines, and noting instrument readings. Measures wire for size, using micrometers and fixed gauges. Calculates cross-sectional areas, using micrometers. Cuts wire sample from each order, using wire

cutters, and forwards sample to laboratory for analysis. Examines wire for defects, such as pits, scratches, burnt surfaces, slivers, irregularly shaped sections and chatter marks (vibrations emitted by wire drawn tight in draw die). Records test results and tags inspected wire. Informs foreman when wire varies from specifications.

May test wire for defective insulation and resistance to high temperature, using electrical testing equipment and electric heating furnace.

8146-138 CASTING INSPECTOR(iron & steel; non-ferrous metal) DPT:687 GED: 3 SVP: 5 EC: I 5 7 PA: M 4 7

Inspects metal castings for dimensional accuracy and surface defects: Measures dimensions of casting, using fixed gauges. Examines castings for defects, such as cracks and blowholes. Separates and marks defective castings, according to salvage operation required.

May chip surplus metal from casting, using hammer and chisel. May tap casting with hammer to determine from sound if casting has been heat treated or to detect defects, such as cracks or thin walls.

8146-142 HARDNESS TESTER, METAL(iron & steel; non- ferrous metal) DPT:384 GED: 3 SVP: 4 EC: I PA: M 4 7

Tests metal objects to determine their degree of hardness, using hardness testing equipment:

Positions workpiece on anvil or bed of testing machine and turns controls to press steel ball or diamond-point against surface of piece, or to let diamond-pointed hammer fall on surface to be tested. Measures diameter of indentation made by steel balls, using special microscope, or reads scale on test equipment which indicates depth of penetration of ball or diamond-point, or calibrated height of hammer rebound. Reads hardness number from calibrated scale on equipment, or converts scale reading to hardness number, using formula or conversion chart.

May measure hardness of abrasive crystals by shooting known grade of crystals through a small jet against an abrasive wheel at a pre-determined speed, and measuring resulting indentation, using micrometer. May cut off cross section of sample part, using band or hand saw, and examine it under microscope to determine hardness depth.

8146-146 METAL INSPECTOR(non-ferrous metal) DPT:587 metal checker. GED: 3 SVP: 4 EC: I PA: L 4 7

Inspects cast aluminum alloy ingots to ensure conformance to specifications:

Reviews reports of chemical analysis of ingot batches and ensures that composition of alloy is within standard limits as determined by laboratory, using charts. Marks ingots by affixing tags on pallets to denote acceptance or rejection. Weighs ingots at random to ensure conformity to specifications.

8146-150 TINPLATE INSPECTOR AND GRADER(iron & steel; non-ferrous metal) DPT:687 assorter. GED: 3 SVP: 4 EC: I PA: M 4 7

Inspects tinplate for defects and conformance to specified weight, size, and gauge, and classifies material according to quality:

Examines sheets for defects, such as insufficient coating, holes, waves, rough spots, bows, twists, or dirt. Wipes grease from sheets with cloth and straightens bent corners with hand tool. Measures gauge of sheets, using micrometers, and compares measurements with customer's specifications. Weighs sheets on scale. Sorts and piles sheets according to quality. Marks identifying information on piles with marker.

8146-154 MOLTEN METAL SAMPLER(iron & steel; non- ferrous metal) DPT:587 sampler; test boy. GED: 2 SVP: 3 EC: I 3 5 6 7 PA: L 4 7

Obtains sample of molten metal from each furnace heat, using hand ladle or glass tube:

Skims slag from surface of melt in furnace, using raking pole. Adds chemical to melt and observes reaction of chemicals to determine

proper time to remove sample. Dips hand ladle or inserts glass tube into pouring ladle, before moulds are poured or filled. Pours molten metal from hand ladle in core sand mould to cast test bars and pin-samples, or allows melt to solidify in glass tube. Breaks or drills solidified metal to obtain test sample, using hammer or drill press. Marks sample according to heat from which sample was taken. Sends sample to laboratory for analysis, and records results. Cleans dust collectors and slag tank.

**8146-199 OTHER INSPECTING, TESTING, GRADING
AND SAMPLING OCCUPATIONS, METAL
PROCESSING**

This group includes inspectors testers, graders and samplers, in metal processing, not elsewhere classified; for example, those who drop specified weights on steel rail to measure strength and ductility of steel; fill pipes and tubes with water under pressure to test strength of articles; identify grades of steel products by visual observation of induced-friction sparks; collect, prepare and identify samples of iron and steel products, and inspect anodized aluminum extrusions for colour conformity. Typical examples of occupational titles covered by this residual group definition are:

Core Checker(iron & steel)
Drop-Test Inspector(iron & steel)
Hydrostatic Tester(iron & steel; non-ferrous metal)
Spark Tester(iron & steel)
Test Preparer(iron & steel)

**8148-OCCUPATIONS IN LABOURING AND OTHER
ELEMENTAL WORK, METAL PROCESSING**

This unit group includes occupations in labouring or other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with processing partially or fully-refined metals to make semi-finished or finished metal stock and products.

8148-110 LABOURER, ALL-ROUND(non-ferrous metal)
DPT:686
GED: 2 SVP: 2 EC: I 5 6 7 PA: H 3 4 7

Assists other workers in the production of non-ferrous metal products, performing any combination of the following duties:

Dumps load of scrap metal into crusher, or shovels scrap into bailing machine. Shovels scrap metal onto dryer conveyor preparatory to melting. Dumps lubricant and materials, such as paste oil, grease, rolling and cleaning oils and water into drum, mixes solution and transfers mixture to feeder tanks for use in rolling or extruding mills. Dries finished metal tubes with air hose. Examines and sorts metal products for defects, such as dents, cracks and scratches. Taps dents from products, using mallet. Feeds automatic machines that ream, stamp and clean castings. Scrapes carbon, dirt, and metal particles from interiors of moulds. Transports scrap metal from work to storage areas, using fork-lift or handtruck. Records quantity and type of scrap. Cleans work area, using broom and shovel.

May assist loading and unloading trucks, and packing products for shipment. May clean rolling and extruding presses, using solvent, cloth, brush and air hose.

8148-114 LABOURER, STEEL PRODUCTION(iron & steel)
DPT:686
GED: 2 SVP: 2 EC: B 3 4 5 6 7 PA: H 4 7

Assists workers engaged in production of iron and steel, performing any combination of the following duties:

Feeds and offbears equipment, such as conveyors, pilers and loaders, to charge furnaces, transport hot metal to rollers, and store finished products. Bundles and ties metal rods, sheets and wire, using banding machine and hand tools. Trims loops from reeled bundles of rods, using axe or hand cutters. Identifies metal products, using tags or coloured paints. Attaches cranehooks, slings, or cradles to material and equipment for moving by crane. Transports material to and from production stations and storage areas, using handtruck or wheelbarrow. Feeds material, such as ganister, magnesite and limestone into crushers or bins to prepare additives for molten metal. Grinds defects,

such as burrs, seams and scratches from rolled steel, using grinder. Sweeps work area and empties dust bins, using wheelbarrow, broom and shovel. Breaks up manganese and scrap metal to facilitate handling, using sledge and pneumatic hammer. Marks identification numbers on steel billets, using chalk. Verifies dimensions of products, using fixed gauge. Wipes grease and oil from machinery with rags and solvent.

May be designated according to specific duties performed; for example,

Conveyor Man
Crusherman
Loading Checker
Marker

**8148-118 FOUNDRY WORKER(iron & steel; non-ferrous
metal)**
DPT:687
foundry helper.
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: H 4 7

Performs any combination of the following duties in foundry, concerned with melting metal, moulding and casting:

Moves sand, castings, flasks, or other materials about foundry by hand, using wheelbarrow or cart, or loading them onto conveyor. Assembles flask, using wrench, bolts, and tap screws. Waters and mixes sand, shovels sand into flasks, and compacts sand in flasks, using ramming tool. Sprays binder on surface of sand moulds. Fits together, clamps, and unclamps cope and drag on production line. Weighs out specified amounts of materials for furnace charge and loads charge into melting furnace. Skims slag from surface of molten metal, using scoop. Carries or pushes ladles of molten metal on monorail and pours metal into moulds. Installs and removes steel jackets and bands used to hold snap moulds together during casting. Breaks sand moulds from finished castings, using bar or hammer. Sorts castings into pairs or groups for assembly. Pulls reinforcing wires from castings. Directs high pressure stream of water onto castings to clean castings and remove cores. Cleans castings, patterns, and flasks, using wire brush. Removes gates, sprues, and other projections from castings with sledge, pneumatic hammer, power shear, or power saw. Breaks up used sand moulds with bar, shovels sand into drying oven and sand mixing machine, and sifts sand through motor driven screen for reuse in new moulds. Breaks up slag, using hammer, and shovels it into buckets for removal. Chips out worn cupola and ladle linings, using bar. Prepares plaster and relines ladle. Sweeps and cleans work areas.

May be designated according to worker assisted or task performed; for example,

Cupola Helper
Ladle-Man Helper
Moulder Helper
Pot Carrier
Shake-Out Man

8148-122 BILLET PUSHER(iron & steel)
DPT:686
GED: 1 SVP: 2 EC: I 3 5 6 7 PA: M 4 7

Activates mechanism that pushes heat-conditioned ingots, billets or blooms out of reheating furnace onto table conveyor preparatory to rolling.

Opens furnace door by pulling rope, activates movement of pusher bar by depressing hydraulic pedal, and repositions pusher bar and door when billet is clear. Observes condition and temperature of billets in furnace and reports irregularities. Assists other workers in scraping furnace bottom. Assists in changing rolls and guides on roughing or finishing stands, using hand tools.

**8148-124 CASTING-MACHINE-OPERATOR
HELPER(electric. equip.)**
DPT:686
GED: 1 SVP: 2 EC: I PA: M 4

Helps grid-casting-machine operators in moulding electrical parts: Unloads casting machine by removing grids from machine rails, counting grids and stacking them aside. See also definition for term title, 02-160 HELPER (any ind.).

8148-126 POWDERED-METAL MIXER(iron & steel; non-ferrous metal) DPT:686
powdered-metal blender.
 GED: 1 SVP: 2 EC: 1 PA: H 4 7

Feeds machines that blend batches of powdered metal to make metal alloys:

Weighs out specified amounts of materials, using scale or combines portions of material. Dumps powders into mixing machine, such as tumbling barrel or paddle-type mixer, and starts motor. Stops motor after specified time and dumps mixture into containers.

8148-130 CASTING-HOUSE LABOURER(non-ferrous metal) DPT:687
casting serviceman.
 GED: 1 SVP: 2 EC: B 3 6 PA: H 4 7

Performs any combination of the following duties related to preparing castings in non-ferrous metal foundry:

Skims dross from furnaces, using rake, and dumps dross into carts or buckets. Adds flux to metal scrap to prepare making of refractory mixture. Loads handtrucks with ingots and sorts scrap. Weighs metal, charges furnaces, prepares casting equipment and transports metal. Marks identifying number on billets or ingots, using stencil, or punch and hammer. Unloads trucks of scrap and loads baled scrap into drums and pallets. Cuts metal billet, according to instructions, using pneumatic or electric saw. Removes moulds from turning table. May be designated according to specific duty performed, Zinc Drosser

8148-134 FOUNDRY LABOURER, CORE ROOM(iron & steel) DPT:687
 GED: 1 SVP: 2 EC: I 3 7 PA: M 3 4

Performs any combination of the following duties involved in coremaking:

Pastes core sections together to form completed core. Brushes, dips or sprays solution, such as graphite, on cores to produce smooth finish. Carries and loads cores into oven. Piles baked cores on racks for drying and cooling. Carries sand to core room. Pulls wires and rods from finished castings, using pliers, hammer, chisel and special hooks. Dresses cores, using hand or power tools, such as files, scrapers, torch and portable grinding wheel. Packs cores in containers for further processing.

May fill cracks in surface of core with putty or patching sand, using putty knife. May form core reinforcing rods and wires into specified shape by hand or by tending machines, such as power shear, automatic wire cutters, power presses or rod straightening machine. May be designated according to specific duty performed; for example,

Core Assembler
 Core Filer
 Core Paster
 Wire Bender

8148-138 FURNACE TAPPER LABOURER(non-ferrous metal) DPT:687
 GED: 1 SVP: 2 EC: I 3 6 7 PA: H 3 4

Taps molten non-ferrous metals, such as copper or aluminum into moulds, crucibles or ladles by performing any combination of the following duties:

Chips and pries out old refractory lining, slag, or solidified metal from ladles, launders, and troughs, using crowbar or hammer and chisel. Mixes refractory material, such as clay, cement and water to specified consistency. Lines or plasters ladles, funnels, troughs, and pouring spouts with refractory clay and tamps it in place with trowel. Brushes bone ash or graphite on lined surfaces to prevent molten metal from sticking. Dries and bakes ladle lining, using blow torch, or by placing ladle over burner, or by shoveling live charcoal into ladle. Shovels live charcoal into spouts and funnels to preheat them for pouring, and over surface of molten metal in tilting ladle to prevent oxidation. Brushes sand on lip of ladle, using shovel, and lowers ladle during tapping to prevent molten stream from splashing. May remove charcoal ashes, using ladle.

8148-140 INDUSTRIAL-FURNACE CLEANER(iron & steel; non-ferrous metal) DPT:687
furnace-maintenance man.
 GED: 1 SVP: 2 EC: I 3 5 6 7 PA: M 2 3 4

Cleans smelting and refining furnaces by performing any combination of the following duties:

Sweeps, stacks and removes refuse to clean bottom of lime kilns and rubberized conveyors, using broom, brushes and shovels. Cleans ventilation pipes, flues and hoppers of electric furnaces, using mallet and air hose. Lowers and raises cleaning device on cable through pipes and chimney, using hand winch. Repairs lining and launders, using mortar and hand tools. Empties and cleans feed surge bins to prevent furnace blockages, using wheelbarrow, bars, scrapers, shovel and broom. Cleans checkers of open-hearth furnaces. Loosens bricks in bulkhead, using tongs and hammer, inserts air hose through orifice to blow out flue dust, and replaces bricks, to seal bulkhead, using refractory material and trowel. Cleans scrubber units to remove accumulated dusts from gases. Pries and scrapes solids from walls, ceiling, floor, intake ducts, eliminator plates, dampers and fan vanes. Checks suction power of screens, using manometer. Verifies pressure of water sprays, and replaces or cleans defective nozzles. Unfreezes header pipe to permit free circulation of plant liquor or slurry to risers and heating pipes, using kerosene flambeau.

May be designated according to type of furnace cleaned; for example, Kiln Cleaner(non-ferrous metal)
 Soderberg Scrubber(non-ferrous metal)

8148-142 PRODUCTION HELPER(wire prod.) DPT:687
 GED: 1 SVP: 2 EC: I 3 5 PA: M 4

Moves reels of wire and other materials by performing any combination of the following duties:

Ties pull ropes, attached to cables emerging from extruding clamps, onto take-off reels. Hoists full reels from braiding, winding and other fabricating machines, using power hoist. Rolls reels to other work areas or storeroom. Moves wire, rubber and other raw materials from storage to work area, using handtruck. See also definition for term title, 02-160 HELPER (any ind.).

8148-146 CHARGER HELPER(iron & steel) DPT:686
steel pusher helper.
 GED: 1 SVP: 1 EC: I 3 5 7 PA: H 4

Helps in moving steel blooms, billets and slabs through soaking- pit furnaces:

Positions and straightens steel on furnace skids and roller conveyor, using bar. Places separators between steel shapes, and marks identifying information on shapes. Assists other workers in cleaning furnace bottoms, and repairing or replacing defective equipment, using hand tools. See also definition for term title, 02-160 HELPER (any ind.).

8148-150 PIG-MACHINE-OPERATOR HELPER(iron & steel) DPT:686
 GED: 1 SVP: 1 EC: I 3 5 6 7 PA: H 4

Helps to cast pig iron:

Removes pigs stuck in moulds, using bar, hammer and hooks. Knocks pieces of iron and slag from ladles and runners, using pole or bar and sledge hammer. Shovels or throws braize on flowing iron to prevent freezing. Assists operator in maintenance and repair of equipment. Cleans work area and iron scrap from pig machine. See also definition for term title, 02-160 HELPER (any ind.).

May load and transport pigs to railway cars, using wheelbarrow.

8148-199 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, METAL PROCESSING

This group includes labourers and other elemental workers in metal processing, not elsewhere classified; for example, those who release molten non-ferrous metal that drips into a quenching medium to form pellets; observe and adjust parts of rolling mill before and during rolling operation, and operate conveyors to clear sinter-feeding system. Typical examples of occupational titles covered by this residual group definition are:

Pellet-Shot Maker(non-ferrous metal)
 Roll Hand(iron & steel; non-ferrous metal)
 Shut-Down Man(iron & steel)

**8149-METAL PROCESSING AND RELATED
OCCUPATIONS, N.E.C.**

This unit group includes occupations, not elsewhere classified, concerned with carrying out support activities in the processing of metals; such as, operating and tending furnaces that re-heat, degas or atomize metals to produce purified metal or metal powders; sorting, weighing and mixing various scrap metals and ingots for furnace charges, to produce specific alloys; operating and tending machines that draw, shape and emboss precious and base metals for jewellery products; operating and tending machines that cover wire with a variety of materials, and braid, stripe and wind wire on spools and reels; and tending equipment to salvage metal and oil.

**Converting and Re-Heating Furnace Occupations
8149-110 through 8149-130**

8149-110 STEEL-DEGASSER OPERATOR(iron & steel) DPT:582

vacuum degasser.

GED: 4 SVP: 7 EC: I 3 5 6 7 PA: H 2 4 7

Operates equipment that removes porosity-creating gases from molten steel to produce high quality product, using vacuum process:

Inspects and tests equipment, such as valves, limit switches, control panel lights, heating elements, condition of vessel and nozzle lining to ensure proper operation. Preheats degassing vessel to specified temperature. Determines grade of steel, size of batch, time of pour and alloy additives required. Shovels specified kind and quantity of alloy, such as ferro-chrome, silicon, manganese and nickel into bin dispenser. Operates control panel to load additives into furnace. Presses buttons on control panel to move ladle of molten steel on transfer car under vacuum degassing vessel, lowers nozzle of vessel into molten vessel, and draws successive batches of steel from ladle into vessel where gases are drawn off by vacuum system. Drains degassed steel back into furnace. Obtains samples of steel for laboratory analysis. Maintains record of operations.

8149-114 STOVEMAN(iron & steel) DPT:682

hot-blast man; stove operator.

GED: 3 SVP: 5 EC: B 3 5 6 7 PA: M 4

Operates battery of gas-fired stoves to supply heated air to blast furnace:

Turns gas valves and ignites burners in combustion chamber of stove, using torch. Observes temperature recording devices. Moves controls to close gas and chimney valves when heat inside stove reaches specified temperature. Opens valves on stoves allowing air from blower to pass through hot-blast stove into furnace. Adjusts stove controls to maintain specified temperature of air blast. Alternates operation among stoves in battery to provide continuous blast of hot air. Cleans carbon and dirt from flues to prevent internal explosions. Inspects cooling and washing equipment for leaks. Assists furnace crew in casting hot metal and flushing slag from furnace.

8149-118 DEPILER TENDER(iron & steel; non-ferrous metal) DPT:685

table man.

GED: 3 SVP: 4 EC: I 3 5 6 7 PA: M 4

Tends equipment that transfers blooms, billets or slabs from conveyor onto charging table of reheating furnace:

Moves controls to transfer blooms, billets or slabs from conveyor onto depiler. Measures metal for conformance to specifications, using tape, and compares identifying marks with information on charging schedule. Pushes levers to lower depiler table and cause pushoff arm of depiler to push metal onto charging table. Assists furnace crew in cleaning bottom of furnace and hearth and in positioning blooms, billets or slabs in furnace.

8149-122 LEAD ATOMIZER(non-ferrous metal) DPT:685

lead blower; lead-furnace tender.

GED: 2 SVP: 3 EC: I 3 7 PA: M 4 7

Tends equipment that melts and atomizes lead for use in compound-ing paint pigments:

Starts motor to pump fuel oil to furnace burners. Ignites burners, reads temperature gauge, and adjusts controls to regulate flow of fuel oil to maintain specified furnace temperature. Starts conveyor leading to furnace and dumps lead pigs onto conveyor. Moves controls of air compressor that forces air into molten lead in furnace to vaporize lead for further processing.

8149-126 SCRAP-METAL PROCESSOR(non-ferrous metal) DPT:687

alloyman; charge-gang weigher.

GED: 2 SVP: 3 EC: I 5 6 PA: VH 3 4 7

Sorts, weighs and mixes non-ferrous scrap metal and ingots in required proportions for furnace charges:

Separates grades and types of alloys in scrap pile by colour and shape of castings, and shovels metal into hand truck, bin or boxes. Selects scrap and ingots for furnace charge according to specifications. Places empty box on scale, sets scale to zero and throws required amount of each metal in box according to alloy required. Takes samples of furnace melts for laboratory analysis. Observes metal in die-casting holding pots and finished castings, or reads label to verify use of specified alloys.

May unload box cars of scrap. May operate lift truck to transport materials. May charge furnaces with alloy.

8149-130 ZINC-DUST MAKER(non-ferrous metal) DPT:685

atomizer operator.

GED: 2 SVP: 2 EC: I 5 6 PA: M 4

Tends electric or gas furnace and air tunnel to produce zinc dust:

Charges furnace with bars or scraps of zinc. Moves controls to regulate automatic heat and air blast that melt and atomize zinc. Scrapes dross from surface of molten zinc, using skimming tool. Tilts furnace to pour molten zinc into launder leading to air tunnel, using hoist. Fits air nozzle in zinc atomizer to strike against metal flow, using hand tools. Rakes zinc dust onto conveyor and into barrels. Loads barrels on cars, using lift truck. Prepares new nozzles for atomizer by packing graphite or ceramic nipple in pot with asbestos and clay.

Wire Winding and Wire Covering Occupations

8149-150 through 8149-182

8149-150 JEWELLERY-WIRE FINISHER(jewellery & precious metal prod.) DPT:682

fancy-wire drawer.

GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Draws, shapes, engraves or embosses precious or base metal wire for use in fabricating precious or costume jewellery, such as chains, box links and bracelets:

Fits specified drawing die into machine, using hand tools. Inserts tapered end of metal wire, such as gold, platinum or silver through die hole, pulls wire through die and attaches end to take-up spool. Starts drawing press that forms round, half-round, square or rectangular jewellery wire. Engraves ornamental designs on surface of wire, using triangular and square-pointed tools, such as gravers and carvers, or selects shaping, reducing or embossing roller dies to emboss wire with decorative patterns. Positions roller die in machine, and turns setscrews to secure die in place. Places wire in feed mechanism and starts machine that shapes, reduces, draws and embosses wire. Verifies dimensions of rolled or drawn wire, using micrometers.

May operate extrusion press to reduce diameter of metal billets preparatory to drawing into wire.

8149-154 ASBESTOS-WIRE FINISHER(wire prod.) DPT:682
GED: 3 SVP: 4 EC: I 7 PA: M 4

Operates machine to card asbestos fibres, wrap them around electric wire and impregnate fibres with wax:
Loads reel of electric wire onto machine spindle, manually or using hoist. Threads wire between guides, through taping, carding, impregnating and cooling units, and fastens it to take-up reel. Places roll of tape on spindle and inserts end in taping device that folds tape around wire. Places lap of asbestos fibres on carding device that shreds asbestos and cards it onto wire in continuous layer. Starts machine and observes operation to ensure uniform coverage of wire. Adjusts controls for conformance to specifications, and replenishes tape supply and asbestos.

8149-158 WIRE-SAMPLE FORMER(wire prod.) DPT:682
GED: 3 SVP: 4 EC: I 3 5 PA: M 4 7

Operates machine to form wire samples from cut of copper ingot for metallurgical testing:
Places cut ingot on work bench, using hoist, and smooths lateral sides to remove saw marks, using emery wheel. Pushes smoothed ingot into furnace, and heats sample to light-red glow. Positions heated ingot on rolling stand, and rolls sample into flat sheet of required thickness by passing it through rolling machine. Pushes sheet into multiple lateral saws to cut it into narrow strips or rods. Coils strips manually, and immerses them in acid bath to remove scale and dirt, using hoist. Tapers end of roll, using hammer. Inserts tapered end through selected steel-wire die, and fastens end to powered clamp. Depresses pedal to draw rod through die, and secures end on automatic coiler, using wrenches. Operates drawing machine to draw rod to wire of specified size by passing rod through series of dies of decreasing diameters.

May butt-weld strip or rod ends to form one continuous coil before drawing process. May cut unused portions of wire used in metallurgical testing into bearings used for ball-pen points.

8149-162 ARMOURING-MACHINE TENDER(wire prod.) DPT:685
GED: 3 SVP: 3 EC: I 5 PA: M 4 7

Tends machine that winds protective wire or continuous interlocking metal strip into flexible conduit or over insulated wire, such as industrial and service entrance wire, submarine and underground cable:

Loads reels of insulated wire and metal strip on pay-out stand, manually or using hoist. Changes forming and crimping dies to meet order specifications, using hand tools. Threads protective wire, metal or strip through guides and dies of automatic winding machine. Starts machine and feeds insulated wire or wires into machine and onto take-up reel. Observes angle of spiral and adjusts guides, using wrench and screwdriver. Verifies diameter of cable or wire, using micrometer, and checks longitudinal distance between start and end of complete twist of wire, using tape rule. Removes and tags finished reels from take-up stand, using hoist.

May weld ends of metal strip to repair breaks or to make continuous lengths, using butt welder. May tend machine that twists wires into cable and applies insulating tape. May be designated according to type of product insulated; for example,

Cable Armourer
Flexible-Conduit Coiler

8149-166 BRAIDER TENDER(wire prod.) DPT:685
GED: 3 SVP: 3 EC: I 5 PA: L 4 7

Tends battery of automatic braiding machines that cover electric wire and cable with insulating material such as cotton yarn, rubber tape, fibreglass, or fine steel, copper and aluminum strands:

Places bobbins of insulating material on machine spindles and threads strands through braiding head according to pattern draft which specifies lay and sequence of braiding. Locks spool of wire to be insulated or covered on pay-off spindle. Threads wire through machine guides, footage counter and braiding head. Turns setscrews to control tension on wire. Adjusts traverse attachment to ensure even winding of wire or cable. Starts machine and winds braided wire around capstan and onto take-up spool. Replaces empty bobbins and ties broken threads.

May cover electric wire or cable with coloured insulating material to form colour-coded insulated product. May braid yarn or nylon on wire

or cable already covered with plastic or rubber insulation. May be designated according to product braided; for example,
Electric-Wire Braider

8149-170 STRIPING-MACHINE TENDER(wire prod.) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4 7

Tends machine that prints multi-coloured identification stripes on insulated wire according to specifications:

Installs striping wheels in inking head and fills reservoirs with pre-mixed inks of specified colours. Adjusts footage counter and ink timer. Clamps cable spool on payout spindle and threads cable through capstan, through inking head and around take-up spindle. Starts machine and inspects striped cable for defects. Turns setscrews to adjust pressure of striping wheels.

May mix inks in power mixer, according to formula, to obtain specified colours or shades.

8149-174 WIRE-PAIRING-MACHINE TENDER(wire prod.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: M 4

Tends two semi-automatic pairing machines that twist two wires together to form a basic transmission circuit:

Twists ends of wire together, feeds paired wires through guides on bow, around capstan, over guide rollers, and attaches them to take-up reel. Sets counter and presses button to start take-up and pairing motors. Turns adjustment screws to maintain feed, and running, stopping and take-up tension. Stops machine to check for bare spots in insulation and breaks in wire. Tests paired wire for possible shorts. Replaces empty and filled reels.

8149-178 REEL WRAPPER(wire prod.) DPT:685
wrapping-machine tender.
GED: 2 SVP: 2 EC: I PA: M 4

Tends machine that positions and fastens wooden slats (lagging) on reels of lead-covered cable:

Fills hopper of machine with lagging, manually or by opening chute. Positions roll of steel band on spindle of feeding reel, using hoist. Mounts reel of lead-covered cable on axle, using hoist. Starts machine that distributes lagging around edge of cable reel and binds lagging with steel banding.

8149-182 WIRE SPOOLER(wire prod.) DPT:686
coiler.
GED: 2 SVP: 2 EC: I 5 PA: M 4

Winds bare or insulated wire onto spools preparatory to shipment or further processing, using winding machine:

Positions empty spool in machine, manually or using hoist. Threads wire from supply spool or coil through distributor (oscillating guide) and tension guides, and secures end to empty spool or bobbin. Starts machine and observes automatic winding of wire. Stops machine when specified amount of wire has been wound, and cuts wire, using wirecutters. Inserts tie-wire in filled spools, removes spools from machine, and bands and wraps wound wire. Packages finished spools in cartons, stencils required information, and places sealed carton on pallet or truck.

May locate and mark defective insulation during winding process, using spark tester.

Metal and Oil Salvaging Occupations
8149-202 through 8149-218

8149-202 DRIER TENDER(non-ferrous metal) DPT:665
drier man.
GED: 2 SVP: 3 EC: I 5 PA: L 4 5 7

Tends oil-fired, rotary magnetic drier that removes oil and iron particles from aluminum scrap turnings:

Moves controls to start low pressure steam boiler, oil pumps, fans, conveyors and screens. Ignites burner and adjusts mixture of oil and air to obtain desired temperature. Starts drier and turns on current to remove iron particles electromagnetically. Signals workers to load scrap into drier or hopper. Regulates rate of feed in accordance with

oil and iron content in scrap. Pumps cleaned oil into reservoir. Changes drier chart recorders. May place wheelbarrow or tote box at discharge end of drier to receive processed turnings. May weigh filled wheelbarrow and record weight.

8149-206 ELECTROSTATIC-SEPARATOR TENDER(iron & steel) DPT:585
GED: 2 SVP: 3 EC: I 7 PA: M 4

Tends machine that separates steel particles from abrasive particles: Sets controls of machine, according to size of particles to be separated. Ignites burner in kiln to dry particles preparatory to separating. Moves controls of machine that feeds particles through kiln into separator where steel is removed by electrostatic action. Weighs and records weight of particles before and after separation.

8149-210 SCRAP-MACHINE TENDER(iron & steel; non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: H 4

Tends machines, such as baling machine, centrifugal separator and oil purifier to salvage metal parts and cutting oil: Loads and moves barrels or crates of metal chips, shavings or chippings from machining operations, using hand truck. Dumps metal scrap into baling machine, and throws switch to compress scrap into bales. Binds bales of metal scrap with wire or other metal strapping. Shovels or dumps scrap in spinner bucket. Clamps cover, sets timer, adjusts sump pump and oil line valves, and starts automatic cycle of centrifugal machine that spins metal scrap and separates metal from cutting oil. Starts centrifugal oil purifier that filters foreign matter from used oil to make it reusable. Disassembles rejected devices and materials, such as thermostats, valves, conduits and connectors, using hand tools, arbor press, vises and power hacksaw. Sorts parts by type of metal. Weighs bales and barrels of scrap metal, and ties on identification tags.

8149-214 POWDERED-METAL SALVAGE MAN(iron & steel; non-ferrous metal) DPT:685
batch maker
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Tends equipment that mills and recovers powdered metal used in powder metallurgy: Sorts colour coded containers of scrap production material, according to metal or alloy. Pours specified amount of powder or metal scrap into ball-mill drum. Screws cover on drum and straps drum to ball-mill rack. Starts motor that rotates drum to grind powder or scrap by tumbling action of metal balls. Pours powder into containers for drying or further processing. Charges mill with additional balls as specified. May insert filter bag and sieve in centrifuge drum and open water valve to flush milled powder from mill through sieve and filter bag into centrifuge. May tend centrifuge to separate water from powder.

8149-218 SCRAP MAN(iron & steel; non-ferrous metal) DPT:666
picker; salvage man.
GED: 2 SVP: 2 EC: I 5 6 PA: H 3 4 6 7

Sorts and bales metal scrap for salvage: Shovels or dumps containers of metal scrap onto conveyor leading to magnetic drum that removes iron and steel pieces from scrap, or dumps and spreads scrap on floor using hoist and shovel. Picks and removes contaminating and extraneous material, by hand, or guides lifting magnet over material to be sorted. Cuts long pieces of scrap metal into manageable sizes, using power shears or oxyacetylene torch. Places sorted pieces in different containers, or shovels metals into separate piles. Hooks end of scrap metal onto reel of machine and starts machine to wind metal into ball. Shovels and pushes scrap into compression chamber of machine and activates ram that compresses scrap into tight cubes. Turns lever to eject wound ball or block from machine, or pries bundle free, using bar. Signals operator of crane to lower sling and hooks sling to ball or cube, or pushes or rolls ball from work area, manually. May sift scrap to remove excess dirt and rust, using wire sifting tray. May tie ball with wire or strap to prevent unravelling and facilitate transportation. May grade scrap according to alloy content. May turn

reel by hand to wind scrap. May be designated according to duties performed; for example, Scrap Baler Scrap Sorter

Other Metal Processing Occupations 8149-238 through 8149-399

8149-238 UTILITY OPERATOR(non-ferrous metal) DPT:662
rover.
GED: 4 SVP: 6 EC: I 3 5 6 7 PA: H 4 5 6 7

Operates aluminum foil processing machines, such as printing presses, furnaces, cranes, hoists and fork-lift trucks in the absence of regular operators to make aluminum products: Sets up and operates laminating, separating and coating machines to process aluminum foils or sheets. Operates rotogravure or flexographic presses to print required information on aluminum foils. Cuts sheets to specified dimensions, operating rotary or power shears. Operates stretching or rolling machines to condition surface of sheets or to roll slabs to required thicknesses. Directs loading and unloading of furnaces to heat treat or anneal coiled sheets or extrusions. Transports products or machines within mill to assist other workers, using cranes, hoists and fork-lift trucks.

8149-242 DENTAL-AMALGAM PROCESSOR(non-ferrous metal) DPT:682
GED: 3 SVP: 6 EC: I 3 PA: M 4 7

Operates machines to alloy and dissolve tin, zinc, copper and silver in mercury to form dental-amalgam: Melts required proportions of metals in furnace, and pours alloy into mould to form ingots. Cuts ingot into chips or granules of uniform size, using engine-lathe or milling machine. Pours chips or granules in hopper of grinding or tumbling machine, and starts machine to grind them into microgranules of specified size. Places granules in annealing oven for required period. Loads granules into elutriator and turns valve to regulate flow of water that forces granules through sieves to separate them, or dumps granules on vibrating screen. Collects granules left on screen and returns them to furnace for remelting. Loads moist granules in drying oven. Places granules in tumbling machine for final grinding. Dumps granules on shaker, and classifies them according to size. Mixes specimen quantity of alloy with mercury, using mortar and pestle, and packs mixture into mould. Removes amalgam from mould, and sends to laboratory for analysis. Pelletizes or packages amalgam in bottles for shipment.

8149-246 STRETCHER-LEVELLER OPERATOR(non-ferrous metal) DPT:462
extrusion-stretcher operator.
GED: 3 SVP: 4 EC: I 5 7 PA: M 4 5 6 7

Operates machine to stretch, flatten and straighten metal sheets, strips, rods and extruded forms: Installs specified stretching jaws in machine, and adjusts stretcher blocks to size of metal, using hand tools. Lifts and positions material to be stretched in stationary vise, using hoist. Measures metal and compares dimensions with those specified to determine stretch required, using micrometer, tape rule and tolerance tables. Adjusts speed and tension of machine and take-up reel to obtain proper degree of levelling. Moves controls to clamp metal in stretcher jaws, and starts machine. Observes workpiece as tension increases and operates controls to place stress in proper area of metal to avoid distortion. Verifies amount of stretch by visual inspection, reading meter attached to vises, or by listening to sound made by striking metal with wooden mallet. Removes metal and places it on level table to test flatness. Checks dimensions of stretched or levelled material, using level, straight edge, feeler gauge, micrometer and tape. Records production. May flatten and level coiled strips, using winding machine. May be designated according to metal processed; for example, Aluminum-Stretcher-Leveller

8149-250 PELLET SEGREGATOR(explosives) DPT:485
GED: 3 SVP: 4 EC: I 7 PA: L 4 7

Tends equipment in shot tower that segregates and polishes shot (lead pellets) used in shotgun shells:

Starts bucket elevator that conveys newly formed pellets up shot tower and into screening drums that remove oversize and undersize pellets. Turns crank to adjust angle of glass plates over which screened shot is rolled to remove out-of-round pellets, using measuring stick graduated in shot sizes to verify pitch, or size of pellets. Places pellets into sieves, polishing barrel, storage bins or scrap container for remelting. Starts polishing barrel rotating. Weighs sample of shot and counts total number of pellets in sample, using pellet counting plate. Measures size of pellets with measuring sticks, and counts number of each size to determine average size. Rolls pellets under dial micrometer to ascertain roundness and to detect defects such as out of shape and pits. Records results of tests.

8149-254 CARBIDE-TOOL-TIP MAKER(mach., weld. & forg.) DPT:685
GED: 3 SVP: 4 EC: I 3 5 6 PA: M 4 7

Fabricates tungsten-carbide cutting tips, performing any combination of the following duties:

Tends hydraulic press, granulator, tumbling barrel and agitating screens to convert fine tungsten-carbide powder to coarse powder for pressing. Weighs out powder according to specifications, using table scale. Pours powder from scale pan into mould in hydraulic press and activates press to compress mixture into blank. Removes blank from press. Sets automatic feed, time and temperature controls on presintering furnace. Feeds blanks into presintering furnace to remove binder and fuse powders. Removes blanks from furnace and cuts and grinds them into cutting tips, using cutting wheel and diamond grinding wheel. Sets pyrometer controls of sintering furnace and feeds in cutting tips for final sintering. Measures tips for conformance to specifications, using scales and gauges.

8149-258 DIAMOND-POWDER BLENDER(metal fab., n.e.c.) DPT:485
GED: 2 SVP: 4 EC: I 5 7 PA: M 4 7

Tends mixing machine and powered press to blend metal powders with diamond dust or chips, and passes mixture into mould for fusing or sintering:

Calculates weights of powdered metals required, according to formula and work order. Weighs and dumps ingredients into mixing machine. Starts machine that blends metal powder with diamond dust or chips. Removes mixture from machine. Selects steel moulds, slugs and punches. Pours mixture into mould cavity. Places mould on table of powered press, and moves controls to start machine that presses mixture into mould cavity, or compacts mixture in mould, using hammer and drift. Removes mould from press and carries to furnace for fusing or sintering. Glues mould parts together. Records number of moulds filled from each diamond batch. Removes excess particles from induction or graphite moulds.

8149-262 MATRIX FINISHER(metal stamp., press. & coat.) DPT:684
GED: 2 SVP: 3 EC: I 5 7 PA: L 4 7

Finishes and examines metal phonograph matrices after electroplating processes, performing any combination of the following duties:

Strips (separates) master, mother and stamper matrices, using hand tools, files and knife. Holds matrix against sanding belt or grinding wheel of bench grinder, or positions matrix on turntable and holds sandpaper against inside surface to remove burrs. Locates and punches center hole in stamper of mother matrices, using punch press or optical instrument and punching die. Fills offcenter holes with solder, using soldering iron. Cleans and polishes matrices, using hot water, steam, brushes, cloths, naphtha gas and polishing compounds. Examines stamper matrices for defects. Cuts and flares edge of stamper matrices, using press.

May mark identifying information on master matrices, using scribe. May weigh stamper matrices to determine plating thickness, using scale.

8149-266 STRETCHER-LEVELLER HELPER(non-ferrous metal) DPT:666
extrusion-stretcher-operator helper.
GED: 2 SVP: 3 EC: I 5 7 PA: M 4 6 7

Assists machine operators to stretch, flatten and straighten metal sheets, strips, rods and extruded forms:

Lifts and positions material in vises, and moves lever to close clamps, using hoist. Verifies amount of stretch by listening to sounds made by striking metal with wooden mallet. Removes finished product and loads articles on saw table, truck or pallets, using hoist. See also definition for term title, 02-160 HELPER (any ind.).

May flatten and level coiled strips, using winding machine. May install and adjust stretcher jaws according to size of metal, using wrench. May determine amount of stretch required, using micrometer and tolerance tables.

8149-270 METAL-FOIL SEPARATOR(non-ferrous metal) DPT:685
aluminum-sheet separator.
GED: 2 SVP: 3 EC: I PA: M 3 4

Tends machine that separates laminated strips of annealed or coated aluminum foil into single strips:

Pushes laminated roll onto scale to record weight. Inserts steel pipe through core of roll, attaches hoist, and positions roll onto machine. Parts end of laminated strip, manually, and threads separated strips on different rollers. Adjusts side-wheel-knives to trim and cut both sides of single strip, using hand tools. Starts machine and observes operation to ensure proper unrolling of laminated strip and rolling of single strip. Examines rolling of foil to detect defects, such as tears, holes and folds. Unloads roll of foil, using hoist, weighs on scale, and stacks roll into metal rack. Records production data, such as weight and number of laminated rolls processed, and footage and weight of single roll.

8149-274 METAL-TUBE MARKER(iron & steel; non-ferrous metal) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4 7

Tends machine that marks identifying information on metal tubes and pipes prior to storage or shipping:

Selects and installs guide rolls in machine, using hand tools. Installs marking stamp or coloured printing belt. Fills reservoir with ink. Positions tube or pipe on machine table and feeds end into machine. Presses lever to lower stamp or belt and mark identifying information on tube or pipe. Cleans machine, using solvent, brush, rag and scraper.

8149-278 BUNDLING-MACHINE TENDER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that winds chains into bundles preparatory for cleaning or tumbling:

Transports chain from heating furnace to machine, using lift truck. Lifts chain from truck box onto machine, using hoist. Attaches chain to rollers on machine. Starts machine that winds chain around rollers. Passes wire through opposite links and twists wires to tie bundle. Slides bundles from rollers and places them into cleaning tank, using hoist.

8149-282 EXTRUDED-METAL COILER(non-ferrous metal) DPT:685
rod-puller and coiler.
GED: 2 SVP: 2 EC: I 3 5 PA: M 4

Tends device that coils extrusions, such as hot rod, wire or tubing, or moves them along press run-out table for further processing:

Adjusts coiler reel according to specified size and coil, using hand tools. Inserts end of rod, tube, or wire in automatic coiling rack, and moves controls to start coiler. Guides straight lengths of rolled or extruded rod, wire or tube along table to avoid stretching or kinking, using tongs or powered trigger. Sets stops on table, using hand tools, and cuts workpiece to specified lengths, using power-driven saw. Rolls or transports finished lengths into trough for cooling, using hoist. Cleans run-out table and loads scrap into salvage containers.

May stamp grade, alloy mixture and batch number on each workpiece.

8149-286 METAL IMPREGNATOR(iron & steel; non-ferrous metal) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 4

Tends vacuum or pressure tank in which powdered metal parts are impregnated with lubricating oil or molten plastic: Pours impregnating material into tank. Sets controls of heating unit to attain specified temperature of solution. Places containers of parts in tank and closes cover. Observes gauge and turns valves to attain specified pressure or vacuum in tank. Closes valves after specified time, and removes finished parts from tank.

8149-290 POWDER-LUBRICATOR FINISHER(iron & steel; non-ferrous metal) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends machines that lubricate, granulate and screen metallic powder: Pours specified amount of powder and lubricants into mixing machine. Starts machine that mixes powder with lubricants for specified time. Pours mixture into trays and places them in drying ovens. Dumps lubricated and dried powder into hoppers of granulator-screener machine. Starts machine that granulates and screens powder. Pours screened powder into jars or containers. May dump specified amount of lubricated and screened powder into glass jars, place jars on rack of rolling machine, and start machine that forms powder into pellets. May separate pellets according to size and place them in containers.

8149-294 BOTTOM MAKER(iron & steel) DPT:687
soaking-pit bottom cleaner.
GED: 2 SVP: 2 EC: 1 3 5 6 PA: VH 3 4

Cleans bottom of ingot-soaking pits and relines them with coke dust to retard formation of oxide scale on hot ingots: Digs out molten metal, cinder and solidified scale from bottoms of pits, using shovel, flat-pointed bar and pneumatic gun. Scrapes debris

into ladle. Shovels coke dust into pits and levels dust, using bar and rake. May clean non-coked-bottom-soaking pits with water and prepare pit for ignition by closing sand seals.

8149-298 COIL BANDER(iron & steel; non-ferrous metal) DPT:687
GED: 2 SVP: 2 EC: 1 5 6 PA: L 4

Bands metal coils from tandem or strip mill after rolling: Bands metal coils such as strip steel or sheet aluminum with steel bands, using banding machine or crimping tools. Pushes controls to tilt banded coils onto conveyor for removal from mill. May assist in threading metal into mill prior to coiling. May cut steel strapping to required lengths, using hand shears or powered cutting tool.

8149-399 MISCELLANEOUS METAL PROCESSING OCCUPATIONS

This group includes metal processors and related workers, not elsewhere classified; for example, those who stamp alloy content on semi-finished product; plug hollow billets with steel cores; clean adhering metal from extrusion dies; etch depressions in aluminum foil strip to increase surface area; inspect electrolyte pumps to detect leaks; operate mantling equipment to spray molten aluminum on carbon anode; prepare metal bars and samples for chemical and physical tests; repair and adjust electric blowers and gas burners; assemble torpedo jets and thermocouples used for tapping and measuring heat of open-hearth furnace; position and adjust end stops on hot-rail cutting bed to cut rails to length; prepare empty shells for filling; mix, mould, dry and package ferro-silicon briquettes; and cut blooms, shapes or ingots to specified dimensions. Typical examples of occupational titles covered by this residual group definition are: Billet Filler(iron & steel; non-ferrous metal) Carbon-Mantling Equipment Tender(non-ferrous metal) Gagger(iron & steel)

815-CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS

This minor group includes occupations concerned with preparing raw materials, such as clay, glass, stone and miscellaneous non-metallic minerals, abrasives and asbestos for use in a semi-finished or finished state, by means, such as grinding, mixing, separating, melting, baking, drying, heating, impregnating, coating, glazing and forming or moulding materials into stock shapes, parts or products. Occupations concerned with grinding, polishing and finishing precious and semi-precious stones are classified in Unit Group 8591, JEWELLERY AND SILVERWARE FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS. CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS are classified in the following unit groups:

- 8150 Foremen: Clay, Glass and Stone**
Processing, Forming and Related Occupations
- 8151 Furnacemen and Kilnmen: Clay, Glass and Stone**
- 8153 Separating, Crushing, Grinding and Mixing Occupations: Clay, Glass and Stone**
- 8155 Forming Occupations: Clay, Glass and Stone**
- 8156 Inspecting, Testing and Grading Occupations: Clay, Glass and Stone**
Processing and Forming
- 8158 Occupations in Labouring and Other Elemental Work: Clay, Glass and Stone**
Processing and Forming

**8159 Clay, Glass and Stone Processing, Forming
and Related Occupations. n e c**

**8150-FOREMEN: CLAY, GLASS AND STONE
PROCESSING, FORMING AND RELATED
OCCUPATIONS**

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in preparing clay, glass, stone, abrasives, asbestos and related non-metallic minerals for use in semi-finished or finished state.

**8150-110 FOREMAN, CLAY, GLASS AND STONE
FORMING OCCUPATIONS (any ind.) DPT:138**

Supervises and co-ordinates activities of workers concerned with forming clay, glass, stone, abrasives, asbestos and related non-metallic minerals. (Unit Group 8155):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Asbestos-Cement-Products Foreman(asbestos & min. wool; cement, stone & clay)

Brick-and-Tile Foreman(cement, stone & clay)

Clay-Shop Foreman(cement, stone & clay)

Concrete-Products Foreman(cement, stone & clay)

Glass-Forming Foreman(glass)

Moulding Foreman(cement, stone & clay; non-metal. min. prod., n.e.c.)

Plasterboard Foreman(cement, stone & clay)

**8150-114 FOREMAN, CLAY, GLASS AND STONE
FURNACEMEN AND KILNMEN (any ind.)
DPT:138**

Supervises and co-ordinates activities of workers concerned with operating and tending furnaces, kilns, ovens, curing chambers, lehrs and autoclaves to facilitate further processing of clay, glass, stone, abrasives, asbestos and related non-metallic minerals. (Unit Group 8151):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Asbestos-Cement-Kilnmen Foreman(asbestos & min. wool; cement, stone & clay)

Burning Foreman(cement, stone & clay)

Glass-Furnace Foreman(glass)

Periodic-Kiln Foreman(cement, stone & clay; non-metal. min. prod., n.e.c.)

Tunnel-Kiln Foreman(cement, stone & clay; non-metal. min. prod., n.e.c.)

**8150-118 FOREMAN, CLAY, GLASS AND STONE
LABOURERS AND OTHER ELEMENTAL
WORKERS(any ind.) DPT:138**

Supervises and co-ordinates activities of labourers and other elemental workers engaged in processing and forming clay, glass, stone, abrasives, asbestos and related non-metallic minerals. (Unit Group 8158):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Asbestos-Workers Foreman(asbestos & min. wool)

Glass-Workers Foreman(glass)

Kiln-Labourers Foreman(cement, stone & clay; non-metal. min. prod., n.e.c.)

**8150-122 FOREMAN, CLAY, GLASS AND STONE
SEPARATING, CRUSHING, GRINDING AND
MIXING OCCUPATIONS(any ind.) DPT:138**

Supervises and co-ordinates activities of workers who operate or tend machinery that separates, crushes, grinds or mixes clay, glass, stone, abrasives, asbestos and related non-metallic minerals. (Unit Group 8153):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Clay-Preparation Foreman(cement, stone & clay)

Lime-Preparation Foreman(cement, stone & clay)

Milling-Plant Foreman(cement, stone & clay)

Mixing-Plant Foreman(any ind.)

**8150-199 OTHER FOREMEN, CLAY, GLASS AND STONE
PROCESSING, FORMING AND RELATED
OCCUPATIONS**

This group includes clay, glass and stone processing and forming foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in laminating glass and vinyl sheets or tempering sheets of glass to produce safety glass, and preparing asbestos fibers for use in the manufacture of asbestos products. A typical example of an occupational title covered by this residual group definition is:

Safety-Glass Foreman(glass)

**8151-FURNACEMEN AND KILNMEN: CLAY, GLASS
AND STONE**

This unit group includes occupations concerned with operating and tending furnaces, kilns, ovens, curing chambers, lehrs and autoclaves to affect the physical composition and facilitate further processing of clay, glass, stone, abrasives, asbestos and related non-metallic minerals. Activities include: heating, curing and melting to dry materials and to relieve internal stresses or affect hardness; and firing and baking to produce products, such as pottery, glass, ceramics, bricks and tiles.

**Clay Furnacemen and Kilnmen
8151-110 through 8151-130**

**8151-110 PERIODIC-KILN OPERATOR(cement, stone &
clay; non-metal. min. prod., n.e.c.) DPT:362**

Kilnman, periodic.

GED: 3 SVP: 7 EC: 1 3 5 7 PA: M 4 5 6 7

Operates periodic kiln to fire (bake) products, such as brick, tile, abrasives, porcelain and pottery ware to a specified hardness, by performing any combination of the following duties:

Reads work order to determine production requirements for periodic kiln operation. Directs activities of workers who stack greenware into kiln, seal kiln, open fuel valves and light gas or oil jets. Places pyrometric cones and electronic temperature probes at specified positions inside kiln before sealing. Observes, through peephole, pyrometric cones, saggars or product being fired to determine level and uniformity of temperature and humidity at various sections in the kiln. Records temperature readings observed on remote reading dials of electronic temperature probes. Adjusts fuel feed and air draught to regulate kiln temperature according to specifications, and determines when firing is completed. Closes fuel valves to stop firing. Opens kiln crown-holes and installs and starts fans to cool baked ware in kiln.

Directs activities of workers who unseal kiln on completion of cycle and remove cooled ware from kiln.

May operate semi-automatic electrically-heated periodic kiln. May operate periodic kiln fired with coal or wood and remove clinkers from firebox. May rebake products after glaze or decoration is applied to ware. May fire specific product, employ specific process, or operate periodic kilns or ovens of various size and be designated accordingly; for example,

Abrasive-Products Kilnman(non-metal. min. prod., n.e.c.)

Bisque Kilnman(cement, stone & clay)

Brick Kilnman(cement, stone & clay)

Decorating Kilnman(cement, stone & clay)

Glost Kilnman(cement, stone & clay)

8151-114 TUNNEL-KILN OPERATOR(cement, stone & clay; non-metal. min. prod., n.e.c.) DPT:362
kilnman, tunnel.

GED: 3 SVP: 7 EC: I 3 5 7 PA: M 4 5 6 7

Operates tunnel kiln to fire (bake) products, such as brick, tile, abrasives, porcelain and pottery ware, to specified hardness:

Reads work order to determine production requirements for tunnel kiln that is fired for continuous operation. Directs activities of workers loading and unloading kiln cars. Operates transfer car to move loaded kiln cars from drying room or tunnel dryer to entrance of tunnel kiln. Opens door of tunnel kiln and attaches loaded kiln cars to mechanism that propels string of kiln cars through kiln at specified rate. Observes, through peepholes, pyrometric cones, saggars or products being fired to determine temperature and humidity levels at various sections of the kiln. Observes and records readings from kiln temperature meters. Adjusts air draught and fuel feed to regulate kiln temperature according to specifications, and decides when firing is completed. Opens kiln doors at end of firing cycle and moves loaded cars from tunnel kiln to sorting area, using transfer car. Reports information to foreman concerning breakdowns, malfunctions, work progress and firing schedule.

May operate drying tunnel to condition and preheat products preparatory to firing. May operate tunnel kiln heated by electricity. May rebake products after glaze is applied. May fire specific product, employ specific process, or operate tunnel kilns or ovens of various size,

8151-116 HYDROGEN-FURNACE TENDER(electronic equip.) DPT:685

GED: 3 SVP: 4 EC: I 3 6 7 PA: L 4

Tends hydrogen furnace to remove moisture and impurities from ceramic, glass or metal parts used in manufacture of electronic components:

Adjusts furnace controls to regulate gas flow and temperature according to specifications. Loads parts on boats and places boats on conveyor that passes through furnace. Reads pyrometer and gauges to verify gas flow, furnace temperature and temperature of parts in furnace, and adjusts controls to maintain parts at specified temperature. Removes boats from furnace conveyor at end of heating cycle.

May prepare coating solutions and operate equipment to coat parts.

8151-118 DRYING-MACHINE TENDER(cement, stone & clay) DPT:685

GED: 2 SVP: 2 EC: I 3 PA: H 4

Tends machine that dries newly-formed ware in moulds:

Starts electric drier or adjusts valves to admit heat into drying machine. Starts conveyor that automatically carries ware through drying machine. Removes mould from conveyor and ware from mould and rubs excess clay from ware. Places dried ware on rack. Places empty mould on conveyor for transfer to filling station.

8151-122 PERIODIC-KILN-OPERATOR HELPER(cement, stone & clay; non-metal. min. prod., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I 3 5 PA: M 2 3 4

Loads, seats, unseals and unloads periodic kiln, by performing any combination of the following duties:

Lifts and passes packed saggars to co-worker to load periodic kiln. Builds up kiln door with brick and mortar to seal kiln, using hand tools. Opens fuel valves when directed by kiln operator and lights gas or oil jets to fire kiln. Removes brick and mortar seals from kiln door on completion of burning cycle, using hammer and chisel. Climbs

ladder inside cooled kiln and hands down uppermost saggars to co-worker to unload ware from kiln. Unpacks ware from saggars for removal to cleaning and finishing area. Scrapes scrap clay from surface of saggars preparatory to sagger reuse, using knife. Replaces broken sagger pins that support ware in saggars during firing. Removes debris from interior of kiln, using broom, shovel and wheelbarrow. See also definition for term title, 02-160 HELPER (any ind.).

May perform specific activity and be designated accordingly; for example,

Periodic-Kiln Drawer

Periodic-Kiln Loader

8151-126 SAGGER PACKER(cement, stone & clay; non-metal. min. prod., n.e.c.) DPT:686

GED: 2 SVP: 2 EC: I 3 5 PA: H 2 3 4

Places greenware or glazed ware in saggars preparatory to firing in periodic or tunnel kiln:

Places greenware or glazed ware on potter's pins in sagger according to specifications. Places clay-wad-covers on tops of saggars to prevent loaded saggars from tilting when stacked in periodic kiln or on kiln trucks. Transports loaded saggars into periodic kiln, manually or using handtruck, and stacks them around interior of kiln in prescribed manner with the aid of co-worker, using ladder. Stacks loaded saggars onto kiln trucks, manually or using hoist, and pushes kiln truck onto continuous conveyor to fire ware in tunnel kiln.

8151-130 KILN SETTER(cement, stone & clay; non-metal. min. prod., n.e.c.) DPT:687

GED: 2 SVP: 2 EC: I 3 PA: VH 3 4

Positions setting rings or refractory batts on kilncar or in kiln to facilitate circulation of air around clay or abrasive products during firing:

Spaces and levels rings or batts on floor of kiln car or kiln, using hoist, and knowledge of kiln operation and firing process, to ensure that even temperature is maintained during firing. Spreads crushed quartz or sand on floor, rings and batts, to prevent cohesion of products during firing. Positions products, such as bricks, blocks and grinding wheels, on rings or batts, manually or using hoist, ensuring that components of furnace load are compatible. Pushes kiln car into and out of kiln manually, or positions car under moveable kiln and lowers or raises kiln, using hydraulic hoist.

May sort fired products into order lots according to size, shape, grain or colour.

Glass Furnacemen and Kilnmen

8151-150 through 8151-170

8151-150 GLASS-FURNACE OPERATOR(glass) DPT:382
tank-furnace operator.

GED: 3 SVP: 6 EC: I 3 5 6 PA: L 4 7

Controls furnace to melt and fuse ingredients to make glass, by performing any combination of the following duties:

Observes gauges to determine level of molten glass in furnace. Adjusts controls to regulate flow of mixture of ingredients; such as, silica, sand, soda ash and cullet (waste glass) into furnace to maintain specified level. Observes meters, gauges and charts to determine air, fuel and water pressure, and air-fuel ratio. Determines furnace temperature, using pyrometer. Turns valves to control water, air and fuel feed to maintain specified pressures and furnace temperature. Ensures operation of automatic switch that reverses fire from one side of regenerative chamber to other side to equalize heat in furnace. Collects samples of molten glass for laboratory analysis. Examines glass for colour and texture defects indicating equipment malfunction. Examines furnace walls for worn spots and leaks. Records data; such as, water, air and fuel pressures, furnace temperature and equipment malfunctions.

May control furnace to melt ingredients used in manufacture of fibreglass yarn. May control automatic equipment to weigh and mix ingredients. May control combustion phase and be designated accordingly; for example,

Furnace-Combustion Analyst

8151-154 WINDSHIELD-AUTOCLAVE OPERATOR(glass) DPT:384

GED: 3 SVP: 4 EC: I 3 6 PA: M 4 7

Operates autoclave to impart transparency to laminated automobile windshields:

Stacks and locks together tubs loaded with opaque, laminated windshields, using overhead crane and locking pins. Presses switch to open top of autoclave. Positions tubs of windshields into autoclave, using overhead crane. Presses switch to close autoclave. Operates switches and controls to start and regulate flow of steam under pressure through oil in autoclave. Monitors gauges and recorders during process to ensure operation and cycling are according to specifications, and records results. Presses switch to stop process after specified time. Opens autoclave and removes tubs of processed windshields, using overhead crane. Allows oil to drain from tubs into collection chamber. Lowers tubs to floor when draining is completed, and separates tubs from stack, using overhead crane. Records number of windshields processed.

8151-156 ENAMELLING-FURNACE OPERATOR(metal stamp., press. & coat.) DPT:684

GED: 3 SVP: 4 EC: I 3 PA: M 4

Operates furnace and related equipment to preheat metal units, such as bathtubs, sinks and ovens, to coat units with vitreous enamel, and to bake units to fuse and glaze enamelled surface:

Adjusts controls to maintain furnace at specified temperature. Regulates speed of conveyor that carries units through furnace and coating equipment, to preheat units and coat them with enamel. Returns units to furnace to bake enamelled surface. Repeats coating and baking cycle until units are enamelled to specified thickness and hardness and are free from defects, such as blisters and discoloration.

8151-158 LEHR TENDER(glass) DPT:685

GED: 3 SVP: 3 EC: I PA: L 4 7

Tends lehr to heat-condition and treat glass or glassware for purposes such as tempering, bending, removing stress and fusing designs or calibrations:

Loads glass articles onto conveyor. Starts conveyor and adjusts speed of conveyor through lehr to regulate time articles remain in lehr. Adjusts temperature controls according to specifications. Observes articles on conveyor when leaving lehr to detect defects, such as cracks, discoloration and warping. Discards defective articles.

May position glass on forms when bending windshields. May adjust gas flames and cooling jets when tempering specified areas on glassware, such as rims of drinking glasses.

8151-162 LENS HARDENER(scient. & ind. equip., n.e.c.) DPT:685

GED: 2 SVP: 2 EC: I PA: L 4

Tends electric oven and ball-drop-test equipment to harden and test lenses used in safety glasses, by performing any combination of the following duties:

Measures lens thickness, using calipers, to ensure lens conforms to specifications for hardening. Soaks lens in water to loosen from mounting and places decal trademark on corner of lens to cement during hardening. Positions lens in holding fixture and inserts fixture into electric oven. Sets time and temperature controls according to specifications for prescribed hardness. Removes lens after specified time and places in tray to cool, or places lens in airflow to cool. Holds lens in polarized light to detect defects produced by hardening. Places lens on turntable of drop-test machine. Starts machine that automatically drops steel ball of specified weight from specified height onto lens, or places ball in release mechanism of specified height and activates release mechanism. Discards damaged lenses.

8151-166 OVEN TENDER, FIBREGLASS(syn. fibres) DPT:685

GED: 2 SVP: 2 EC: I PA: L 4 7

Tends oven to bake fibreglass slivers or sheets:

Examines fibreglass articles visually for defects, such as grease spots and damaged edges, and loads articles on handtruck. Weighs truck, calculates weight of fibreglass, and pushes truck onto oven conveyor. Adjusts temperature and time controls according to specifications, and

starts conveyor to feed truck into oven. Records weight of fibreglass articles processed. May align wooden forms in oven when baking corrugated fibreglass sheets.

8151-170 FUSING-FURNACE LOADER(glass; plastic prod.) DPT:686

GED: 2 SVP: 2 EC: I PA: L 4

Loads and unloads conveyor of furnace that fuses multifocal lens blanks or moulds unground lens blanks:

Positions lens blanks on metal blocks or moulds. Places blocks or moulds on tray and loads tray on conveyor that passes through furnace to fuse or mould lens blanks according to specifications. Removes tray of blanks from conveyor and records number of lens blanks processed.

May stamp identification number on lens blanks.

Stone Furnacemen and Kilnmen 8151-190 through 8151-226

8151-190 CUPOLA OPERATOR(asbestos & min. wool) DPT:362

GED: 3 SVP: 6 EC: I 3 5 6 PA: M 4 7

Operates water-cooled cupola furnace and related equipment that melts coke, slag, basalt, lime and silica and spins molten mass into mineral wool fibres:

Signals helper to charge furnace with ingredients. Lights fire in furnace to melt ingredients. Reads gauges and turns valves to regulate water and steam pressure. Observes melting of ingredients in furnace through porthole, and adjusts airblast on flaming coke bed to control intensity of heat and melting process. Activates spinning wheel. Removes taphole plug to allow molten stream to flow into water-cooled furnace trough, over high-pressure steam jet and into spinning wheel, to be spun into mineral wool fibres. Observes colour intensity and flow of molten stream to determine its suitability for spinning. Adjusts distance of steam ring and spinning wheel from end of trough to control length of spun fibres. Scrapes residual slag from trough and spinning wheel, using bar and scraper.

8151-194 ASBESTOS-CEMENT-PRODUCT-AUTOCLAVE OPERATOR(asbestos & min. wool; cement, stone & clay) DPT:382

steam-tank operator.

GED: 3 SVP: 6 EC: I 3 5 6 PA: M 4 7

Operates autoclave to cure asbestos-cement products, such as pipes and corrugated asbestos board:

Reads work order and installs control cams in autoclave to provide and maintain temperature, pressure, humidity, and curing period automatically according to specifications. Ensures that autoclave recorders chart actual conditions. Removes protective end plugs from pipes. Operates lift truck to sort and stack trays of moulded products onto autoclave car according to compatibility of curing requirements. Connects cable to loaded car train. Operates cable reeler to pull car train into and out of autoclave. Monitors recording charts throughout automatic curing cycle. Operates lift truck to sort trays of products according to next operation required, and to transport products to appropriate area or machine. Performs maintenance duties, such as replacing door gaskets and greasing cars.

May direct activities of workers engaged in moving green asbestos-cement products through drying, air curing or autoclaving cycles within specified interval after forming. May adjust valves in drying room or air curing room to regulate temperature or humidity according to specifications.

8151-198 ROTARY-KILN OPERATOR(cement, stone & clay) DPT:382

GED: 3 SVP: 5 EC: I 3 5 7 PA: L 4 7

Operates console panel to control rotary type kiln and auxiliary equipment to calcine materials, such as ground stone, gypsum and clay slurry:

Moves controls to light burners and start equipment; such as, conveyors, feeders, dust collectors, crushers and vibrating screens, to feed material into kiln. Starts rotary kiln and monitors panel lights,

gauges and dials and observes colour and shape of flame. Adjusts controls to regulate feed of material and fuel to maintain kiln at specified temperature and operating condition. Adjusts valves to regulate flow of material out of kiln after calcining and to control cooler to cool material. Records data, such as fuel, power and material consumption, and kiln temperature. Inspects kiln periodically for accumulation of clinkers and deterioration of lining. May supervise removal of clinker from kiln wall and relining of kiln with fire-brick.

8151-202 ABRASIVES-FURNACE PREPARER(non-metal, min. prod., n.e.c.) DPT:364
GED: 3 SVP: 5 EC: I 3 5 7 PA: H 4 7

Prepares electric-arc pot-furnace for operation and removes abrasive products from furnace, by performing any combination of the following duties:

Presses button to raise electrodes from furnace. Attaches hook and cable to furnace car and operates electric winch to remove furnace car from well. Attaches hose to furnace and adjusts rate of flow of water according to grade of abrasive required. Stops water flow after specified time. Attaches hook to furnace shell and signals crane driver to lift shell from abrasive ingot. Attaches hook to ingot and signals crane driver to transfer ingot to scales and storage area. Records weight of ingot. Examines condition of electrodes and replaces as required. Examines furnace car and shell for defects and notifies foreman of repairs required. Signals crane driver to reposition shell in furnace car. Operates winch to replace car in furnace well. May remove abrasive coatings from pans or moulds when preparing tilt-furnaces.

8151-206 ASBESTOS BOARD CURER(asbestos & min. wool; cement, stone & clay) DPT:682
GED: 3 SVP: 5 EC: I 3 4 6 PA: L 4 7

Controls temperature and humidity in curing room to cure flat or corrugated asbestos board according to specifications: Operates lift truck to position stacks of green asbestos board and separators into dehydrating press. Manipulates controls to operate press through squeezing cycle and expel superfluous water from flat boards. Operates lift truck to move stacks of flat boards from dehydrating press and stacks of corrugated boards from forming machine into curing room. Seals doors of curing room. Changes sealing gaskets when necessary, using hand tools. Opens and adjusts valves to maintain temperature and humidity at specified levels. Reads temperature and humidity dials and monitors curing process. Closes valves and opens room doors at end of specified curing cycle. Operates lift truck to move stacks of cured boards to stripping station. Manipulates controls of stripping machine to separate boards from spacers. Inspects each cured board for breaks, cracks and surface defects as it is stripped and stacked. May direct activities of workers engaged in stacking cured asbestos board.

8151-210 ASBESTOS-CEMENT-PIPE CURER(asbestos & min. wool; cement, stone & clay) DPT:563
GED: 3 SVP: 5 EC: I 4 5 7 PA: M 4 5 6 7

Operates equipment to stack green asbestos-cement pipe in steam room, and controls conditions in steam room to cure pipe: Directs activities of workers who prepare formed pipe for curing. Operates crane to position sand trays at end of pipe machine. Selects end blocks for insertion into green pipes to maintain roundness and for protection during curing. Operates hoist to lift prepared pipe onto sand bed. Inspects pipe, using straight edge and shims with sand as necessary to prevent deflection. Adjusts steam valves to regulate humidity in steam-curing room according to specifications. Operates monorail crane to transfer and stack trays of pipe in curing room. Monitors curing cycle. Maintains record of curing cycles and production.

8151-214 ASBESTOS-CEMENT-PRODUCTS-DRIER TENDER(asbestos & min. wool; cement, stone & clay) DPT:565
GED: 2 SVP: 3 EC: I 3 5 6 PA: M 3 4

Tends hot-air drier to cure asbestos-cement products: Sorts and stacks moulded products onto trays on handtruck according

to compatibility of curing requirements. Opens door and pushes loaded hand truck into drying room. Records curing data; such as, drier number, truck number, product size, time in and specified time for removal. Opens door of drier at removal time. Carries cable into drier, hooks cable onto handtrucks and signals driver to pull cable, to remove trucks of cured products from drier. Pushes handtruck loaded with cured products to finishing or packing area. Returns empty trucks and trays to moulding area.

8151-218 RETORT TENDER(cement, stone & clay) DPT:685
cylinder man.
GED: 2 SVP: 2 EC: I PA: L 4

Tends steam-pressure cylinder (retort) that bakes lime bricks: Shuts and bolts doors of loaded retort. Opens valve to admit steam into cylinder. Observes pressure gauge and adjusts steam pressure according to specifications. Shuts off steam after specified time and opens cylinder doors. Changes chart and stylus in pressure-recording gauge after each baking process. May assist in moving kiln cars into and out of retort.

8151-222 CUPOLA CHARGER(asbestos & min. wool) DPT:686
GED: 2 SVP: 2 EC: I 7 PA: H 4

Charges cupola furnace with slag, lime, silica, basalt and coke to produce mineral wool fibres: Pulls levers to dump ingredients onto weighing conveyor. Weighs and measures portions of coke, slag, basalt, lime and silica according to specifications. Charges furnace with material in alternate layers as directed. Levels layers in furnace, using rake. Records time of charge and weight of each ingredient.

8151-226 ASBESTOS-CEMENT-PIPE-CURER HELPER(asbestos & min. wool; cement, stone & clay) DPT:687
GED: 2 SVP: 2 EC: I 4 5 6 PA: M 2 3 4

Helps pack green asbestos-cement pipes in sand trays for curing: Examines interior and exterior of pipe for damage caused by mandrel removal, using flood lamps. Rolls rejected pipes to scrap box and notifies curer of type of defect. Marks acceptable pipes with identifying code, using stencils. Inserts and secures end blocks into green pipes, using tape to maintain roundness and for protection during curing. Levels sand in curing tray, using rake. Guides hoisted pipes into position on sand tray. Repacks supporting sand as directed to prevent pipe deflection. Hooks and unhooks loads lifted by crane and hoist. See also definition for term title, 02-160 HELPER (any ind.). May wrap pipes in plastic sheets preparatory to curing.

8153-SEPARATING, CRUSHING, GRINDING AND MIXING OCCUPATIONS: CLAY, GLASS AND STONE

This unit group includes occupations primarily concerned with operating or tending machinery and equipment that separate clay, glass, stone, abrasives, asbestos and related non-metallic minerals by centrifuging, screening and agitating; reduce materials to smaller particles by crushing; and grind and mix materials to produce a blended mass. Occupations concerned with mixing concrete and asphalt on construction sites are classified in Unit Group 8799, OTHER CONSTRUCTION TRADES OCCUPATIONS, N.E.C.

Separating and Crushing Occupations 8153-110 through 8153-130

8153-110 EMERY-GRADING OPERATOR(non-metal. min. prod., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: I 5 PA: M 4 7

Operates pebble mill and centrifuge to grind and grade emery according to required fineness: Dumps bags of emery into mill and takes sample. Examines emery,

using microscope, to determine grinding time. Starts pebble mill to grind emery to required fineness. Turns valve to transfer ground emery particles to agitator tank. Opens valve to add water to agitator tank. Starts agitator to combine emery particles and water into slurry. Activates pump to transfer slurry to centrifuge. Starts centrifuge to grade emery by size. Stops centrifuge and activates pump to transfer graded emery to settling tanks. Drains water from settling tank to dry emery. Shovels dried emery from tank to storage container. Weighs and records weight of each batch.

8153-114 CRUSHER TENDER(cement, stone & clay) DPT:665
GED: 2 SVP: 2 EC: B 5 7 PA: M 2 4 5 6

Tends machine that crushes material; such as, rocks and cinders to specified size:

Signals driver of front-end loader to dump material into hopper above conveyor belt. Regulates flow of material from hopper onto conveyor and through crushing machine. Observes flow of material on conveyor and through crushing machine to locate blockages. Stops conveyor and crusher when mechanism is blocked with material and breaks large pieces, using crow bar and sledge hammer. Changes or adjusts screens to control size of crushed material, using hand tools. Repairs damaged screens, using wire and wire cutters.

8153-118 CULLET-CRUSHER TENDER(glass) DPT:685
batch-plant tender.
GED: 2 SVP: 2 EC: B 5 7 PA: M 4 7

Tends machine that crushes cullet (waste glass) used in production of molten glass:

Starts conveyor to transfer cullet from storage bin to crushing machine. Starts and observes crushing machine to grind cullet to specified fineness. Regulates water spray on conveyor screen to cool cullet as it leaves crushing machine. Starts conveyor to transfer cullet to storage bins.

May operate front-end loader to transfer raw materials, such as, silica sand and soda ash, from yard or freight cars to storage bins. May tend automatic scales to weigh specified amounts of raw materials.

8153-122 HAMMER-MILL TENDER(asbestos & min. wool; cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: H 3 4

Loads and tends hammer mill that breaks and crushes pieces of material, such as slag, slate and asbestos-cement, into powder:

Sorts material into loads of similar size and breaks large lumps, using sledge hammer. Throws pieces into hopper and starts hammer mill. Observes electric load meter of mill and manipulates gate lever to control rate of feeding material into mill from hopper. Starts conveyor system to transfer pulverized material from mill to storage box and prepares tag to identify contents.

8153-126 SCRUBBER TENDER(cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: B 5 7 PA: L 4

Tends scrubbing machine that screens materials, such as gravel, gypsum and other anhydrites as they move along conveyor:

Turns valves to admit water into cylindrical screen of scrubber. Starts conveyor and scrubber. Opens gate to release materials from hopper onto conveyor for transfer to scrubber. Removes foreign material from mixture and screen. Observes mixture on discharge conveyor to ensure even flow.

8153-130 RECLAIMER, ABRASIVES(non-metal. min. prod., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I PA: M 4

Feeds agitator or rotating washer that separates abrasive particles from waste material:

Adds specified amounts of reagents and turns valve to fill vat with water. Dumps crushed abrasive reclaims into vat. Starts agitator or vat rotating which causes abrasive material to sink to bottom and lighter waste material to float to top. Drains vat and recovers abrasive.

8153-150 ASBESTOS-PIPE-INSULATION MIXER(cement, stone & clay) DPT:365
GED: 3 SVP: 6 EC: I 5 7 PA: H 4 7

Tends mixing machine to prepare gel (cement binder), and monitors moulding, drying and curing operations during preparation of asbestos-pipe insulation:

Weighs specified amounts of materials, such as asbestos, lime, diatomaceous earths and cement, and dumps materials into mixing tank. Opens valve to add specified amount of water and starts machine agitators. Stops machine and operates pump to transfer mixture to gel tank. Performs titration test for alkalinity and calculates volume of acid required to neutralize gel. Compresses sample of gel into cake and evaluates gelling process, texture and cohesive properties. Pumps calculated volume of acid into gel tank and starts agitators. Stops agitators and pumps neutralized gel to holding tank. Inspects moulding operation to evaluate gelling properties and directs moulders to adjust metering and vacuum action as necessary. Monitors drying time and temperatures and changes control cams during autoclaving period. Schedules drying and curing process to maintain work flow.

8153-154 SLURRY-EQUIPMENT OPERATOR(cement, stone & clay) DPT:682
auxiliary-equipment operator.
GED: 3 SVP: 6 EC: I 5 7 PA: L 4 7

Operates console panel to control auxiliary equipment, such as vibrating weighing feeders, conveyors, mills, mixers, pumps and tanks, to mix cement slurry and regulate flow of slurry to kiln:

Receives signal from kiln operator and starts vibrating weighing feeders and conveyor to transfer crushed limestone from storage pile to ball mill which grinds and discharges powdered limestone into storage tanks. Controls pumps to transfer material from sump tank to mixing tank. Opens valves to fill mixing tank with specified amounts of water and powdered limestone. Starts agitators to mix cement slurry. Controls pumps to transfer slurry from mixing tanks to surge tanks that automatically regulate flow of slurry to kiln.

8153-158 BULK-PLANT TENDER(cement, stone & clay) DPT:385
GED: 3 SVP: 5 EC: B 7 PA: M 2 4

Operates equipment to blend materials into a dry-cement mixture for use in cementing oil and gas wells:

Empties sacks of additive chemicals into hoppers of blending machine. Pulls lever to start pneumatic pumping system and regulate quantity of materials transferred to blending machine, following formulas. Presses switch to start blending machine and mix materials, according to specification. Stops pump and blending machine. Pulls levers to open gates and discharge mixture to storage bins. Requisitions materials to replenish stocks. Prepares delivery tickets and weighs mixture as loaded. Records quantities of materials received and issued, using inventory control records.

8153-162 GLASS MIXER(glass) DPT:385
GED: 3 SVP: 5 EC: I 5 6 7 PA: L 4 6 7

Tends automatic scales, batch-mixing machine and other equipment to weigh and mix materials used in making glass, by one of the following methods:

1. Performs applicable duties of 8153-202 MIXER (cement, stone & clay). Transfers mixture in bin to glass furnace, using chain hoist. Activates tilting mechanism to dump mixture into furnace. 2. Observes panel lights and audio signals, and pushes buttons of automatic machine that weighs ingredients, such as sand, clay, soda ash and cullet (waste glass) to regulate quantity released into mixing machine. Activates bypass mechanism when specified amounts of ingredients have entered weigh hopper and are automatically discharged into rotating mixing machine. Changes controls from automatic to manual operation when required. Opens chute to discharge bypassed ingredients onto scales and into mixer when specified weight is attained. Records weight of ingredients in each batch. Pulls lever to start bucket conveyor to replenish ingredients in bins. Weighs and adds specified quantities of additives, such as carbon, salt cake, pyrites and arsenic, using scale.

May tend crusher to fragment cullet. May weigh specified dye requirements, according to formula, to compensate for colour of cullet.

8153-166 MILL TENDER(cement, stone & clay) DPT:685
GED: 3 SVP: 4 EC: I 5 7 PA: M 2 4 7

Tends crushers and mixers to grind clay, and blend clay and shale for use in ceramic moulding:

Performs applicable duties of, 8153-202 MIXER (cement, stone & clay). Dumps clay on crusher-pit grates. Breaks lumps of clay, using iron bar or sledge hammer. Starts crusher to grind clay to specified size. Examines screens and clears blockages, using wire brush. Removes excess moisture from clay, preparatory to mixing, by regulating input and output rate of conveyors and rotating speed and heating cycle of rotary kiln.

May drive front-end loader to convey clay from storage piles to crusher.

8153-170 CEMENT MILLER(cement, stone & clay) DPT:685
GED: 3 SVP: 4 EC: I 5 7 PA: L 4

Tends machines that mix, grind or pulverize materials, such as coal, stone, shale, clay, oyster shells, gypsum and cement clinker, used in making dry cement:

Starts mill and conveyors. Observes conveyor system to ensure continuous flow of materials to or from mill. Stops conveyor to remove obstructions, using bar. Opens chute over conveyor, and adds materials, such as iron, silica or gypsum, according to specifications. Observes operation of auxiliary equipment, such as cement pumps, air or screen separators, air slides, cement coolers and dust collectors. Turns valves to regulate water, air and oil flow in machine to cool cement according to specifications. Adds water to materials to facilitate flow into machine.

8153-174 DIAMOND-POWDER MIXER(non-metal. min. prod., n.e.c.) DPT:484
GED: 2 SVP: 4 EC: I 7 PA: L 4 7

Mixes bort (industrial diamonds), resins and abrasive powders to produce mixtures used in moulding diamond-abrasive-grinding wheels:

Reads instructions from work order card. Computes quantities according to formula and weighs each ingredient, using gram weight balance. Transfers ingredients onto plate glass to prepare batch of specified size. Mixes powdered ingredients and pours mixture into jar, using scraper and spatula. Labels jar to identify mixture with type of wheel to be moulded.

8153-178 ABRASIVE MIXER(non-metal. min. prod., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Tends machine that mixes abrasive compounds for use in making grinding wheels and other abrasive products:

Performs applicable duties of, 8153-202 MIXER (cement, stone & clay). Reads work order to determine amounts of ingredients. Pours mixture into oscillating sieve, using hand scoop, to screen out lumps and oversize granules.

8153-182 MIXING-MACHINE TENDER, PLASTERBOARD(cement, stone & clay) DPT:685
supply man.
GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends conveyors and mixer to blend materials, such as gypsum, flour, potash and lime into slurry, used in production of plasterboards:

Performs applicable duties of, 8153-202 MIXER (cement, stone & clay). Observes flow meters and tends conveyors to regulate rate of flow of material into mixing machine. Observes dials to determine reserves of materials in supply tanks.

May operate hydropulper to grind and mix paper into pulp slurry. May use hand truck, or operate power truck or conveyors to transfer ingredients from storage area to supply tanks.

8153-186 REFRACTORY-MORTAR MIXER(cement, stone & clay) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: H 4

Tends machines that grind and mix materials to form refractory mortar, used to seal, line or insulate equipment; such as, furnaces, pipes and boilers, performing any combination of the following duties:

Shovels specified amounts of materials; such as, brick, clay, asbestos and refractory mud into hopper of crushing machine. Starts and stops crushing machine. Regulates flow of materials from hopper into crushing machine, using hand controls. Shovels crushed materials into wheelbarrow and dumps them into hopper of mixing machine. Turns valve to admit water into mixing machine. Starts machine and regulates flow of crushed material from hopper into mixing machine. Feels consistency of mixture and adds water or crushed material to obtain specified consistency. Stops machine and opens valve to transfer mixture to storage tank or shovels mixture into container for transportation to work area.

May mix silica to form mixture for spraying interiors of furnaces or tend mud-mill to mix lute, used to seal oven doors and be designated accordingly; for example, Mud-Mill Tender Silica-Spray Mixer

8153-190 DRY-PRODUCTS MIXER(cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: H 4

Tends mixing machine to mix dry products such as plaster, mortar and slate:

Performs applicable duties of 8153-202 MIXER (cement, stone & clay). Specializes in weighing and mixing materials such as gypsum fibre, retarder and other additives to make dry plaster or mixing lime, cement and other materials to make mortar.

May tend machine that mixes multicoloured granules of slate for use in surfacing asphalt-coated roofing felt. May be designated according to type of product mixed; for example, Mixer, Dry Plaster Mortar Mixer Slate Mixer

8153-194 GLAZE MAKER(cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Tends ball mill that grinds and mixes materials to produce glaze, used for coating pottery and tiles:

Weights specified amounts of materials, such as calcium carbonate, clay, feldspar and flint, using scale. Pours material into mill, using handscoop. Pushes button to start mill and opens valve to admit specified amount of water. Stops mill and turns valve to transfer mixed glaze over screens from mill to portable storage containers. Transports containers of glaze, as required, to glazing department, using hand cart. Identifies glaze according to batch number and colour, using labels.

May tend kiln to calcine pigment for colouring glaze.

8153-198 LIME SLAKER(cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: L 4

Tends open batch tank or rotary slaker that mixes lime and water to make slaked lime, using one of the following methods:

1. Dumps specified amounts of lime into mixing tank and turns valves to admit water. Starts agitators to dissolve lime. Tends automatic pump to drain mixture through mesh screens or settling tanks into storage tanks. 2. Pushes buttons to regulate automatic feed of lime and water into rotary slaker to obtain continuous production of slaked lime. Tests specific gravity, using hydrometer.

8153-202 MIXER(cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: M 4 7

Tends mixing machines, agitator tanks and related equipment to mix and blend ingredients, such as cement, clay, gypsum, emery, glass and liquids, according to specifications or formulas, by performing any combination of the following duties:

Weights materials, using automatic or other scales. Dumps, pours, pumps or shovels ingredients onto conveyor or into hopper of mixing machine. Adjusts controls to admit specified amounts of ingredients

into mixing machine. Starts machine agitators to mix material for specified period. Adds ingredients during mixing period to attain required consistency of formula. Stops machine when mixing process is complete. Removes mixture from machine manually or by mechanical means, such as conveyors and pumps. Cleans machine preparatory to subsequent runs.

May test mixture for specific gravity, consistency or viscosity, using hydrometer and other testing devices, or submits sample to laboratory for testing. May be designated according to product mixed; for example,

Asbestos Mixer(asbestos & min. wool)

Clay-Slip Mixer

Emery Mixer(non-metal. min. prod., n.e.c.)

Mixer-Caster, Concrete

Rouge Mixer

8153-206 MIXER AND EXTRUDER, MODELLING

CLAY(cement, stone & clay)

DPT:685

GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Tends machines that mix and extrude ingredients to produce modelling clay:

Performs applicable duties of, 8153-202 MIXER (cement, stone & clay). Removes clay from mixing machine and forms it into large balls, by hand. Transports balls of clay to hopper of extruding machine, using hand truck. Attaches specified shape of die to machine, using hand tools. Starts machine that extrudes clay through die to form shaped lengths of modelling clay. Cuts clay to specified size, using wooden knife.

8155-FORMING OCCUPATIONS: CLAY, GLASS AND STONE

This unit group includes occupations concerned with shaping clay, glass, stone, abrasives, asbestos and related non-metallic minerals by methods, such as moulding, spin-casting, blowing and extruding, either by hand or by machine. Activities include: setting-up and operating machines, mixing, smoothing and spreading, cutting, bending and forming, laminating and pressing. Occupations concerned with creating artistic objects in glass are classified in Unit Group 3311, PAINTERS, SCULPTORS AND RELATED ARTISTS.

Clay Forming Occupations

8155-110 through 8155-186

8155-110 BRICK-MACHINE-SET-UP OPERATOR(cement, stone & clay)

DPT:460

dinosaur operator.

GED: 4 SVP: 7 EC: I 3 5 PA: M 4 5 6 7

Sets up and operates automatic machine that cuts extruded clay column into grids of specified size of bricks and sets (loads) grids on kiln car:

Sets up vertical cutting wires to form cutting grid according to specifications and oral instructions, using machine-contained grid-forming adjusting device, hand tools, vernier gauge and calipers. Activates and adjusts automatic air pressure system to ensure plastic separative bags can be inflated to specified pressure and then be deflated. Replaces unserviceable cutting wires and plastic bags, using hand tools. Sets up and adjusts separative bags on lifting arm to ensure spacing conforms to cutting-wire grid, using machine-contained bag-spacing adjusting device, hand tools and calipers. Presses switch to activate automatic machine. Monitors operation of machine that picks extruded column of green-clay off conveyor, cuts column into grids of specified size of bricks, and sets grids on kiln cars. Sprinkles or directs helper to sprinkle sand manually on successive grids of brick set on kiln car to prevent cohesion during firing. Examines brick for conformance to specifications, using calipers. Stops and repairs machine if malfunction or blockage occurs, or adjusts machine if brick does not conform to specifications, using hand tools, machine-contained adjusting devices and calipers. Records production readings from control panel onto production control form.

8155-114 POTTER(cement, stone & clay)

DPT:681

GED: 3 SVP: 7 EC: I PA: M 4 7

Moulds plastic clay to form handcrafted pottery, using a potter's wheel:

Conceives style and shape into which pottery piece is to be formed. Positions ball of clay in center of plaster bat secured to potter's wheel. Starts motor or pumps treadle with foot to start wheel. Presses both thumbs down into center of revolving clay to form hollow. Presses on inside and outside of emerging clay cylinder with hands and fingers, gradually raising and shaping the piece to the desired form and size. Adjusts speed of wheel constantly to conform with changing firmness of clay as piece becomes larger and its walls thinner, judging degrees of change by feel. Trims and smooths surface of finished piece, using rubber scrapers and wet sponge. Pulls wire across top of bat to separate finished piece, using wire held taut between both hands. Places finished piece on rack to dry.

May conduct operation as an exhibition or tourist attraction.

8155-118 DRY-PRESS OPERATOR(cement, stone & clay)

DPT:662

GED: 3 SVP: 6 EC: I 5 7 PA: M 4 7

Operates automatic machine to press dry tempered clay or silica into products such as bricks and wall tiles:

Selects, installs and adjusts upper and lower pressing dies according to work order and specifications, using hoist, gauges and hand tools. Presses switch to start automatic machine. Monitors the flow of tempered clay from feed hopper into die cavities, the pressuring together of the upper and lower hydraulic press dies, the collapsing of the dies and the ejection of the press-formed product. Removes or directs helpers to remove products from press bed and to stack in specified pattern on kiln car or on conveyor. Signals workers to remove loaded kiln car and return empty car. Inspects production-run products periodically to ensure conformance to specifications, using calipers and scale and adjusts machine accordingly. Stops machine if blockage or malfunction occurs, and removes blockage or repairs malfunction.

May operate machine to press specific product or material and be designated accordingly; for example, Ceramic-Tile-Press Operator Clay-Dry-Press Operator

8155-122 JIGGERMAN(cement, stone & clay)

DPT:662

GED: 3 SVP: 6 EC: I 5 PA: M 4 5 6 7

Operates semi-automatic potter's wheel to form articles such as plates, bowls and vases, preparatory to drying:

Clamps or bolts mould-retaining ring into jigger or jolly head of potter's wheel, using hand tools. Places clay-covered mould into ring. Selects profile (shaping tool) according to size and shape of article being formed, and fastens to jigger or jolly arm of potter's wheel, using hand tools. Turns screw manually to adjust machine for specified thickness of article being formed. Depresses foot-switch to start potter's wheel revolving. Lowers jigger or jolly arm with profile attached, using an arm-hand movement, against clay in mould to jigger (pare and shape) clay into article. Verifies that article has been formed according to specifications, using template and calipers. Smooths and trims surface and edges of rotating article, using a wet sponge and hand-trimming tools. Places moulds containing formed article on conveyor to dryer. Assigns tasks and gives directions to helpers.

May fabricate and repair shaping tools and templates. May set up and operate automatic machine to shape greenware and be designated accordingly; for example, Jiggerman, Automatic

8155-126 BRICK-AND-TILE-MAKING-MACHINE OPERATOR(cement, stone and clay)

DPT:682

GED: 3 SVP: 6 EC: I 5 PA: M 4 7

Operates automatic machines that mix ingredients, extrude tempered clay mixture and cut extruded clay into sections to make products such as bricks, drain tiles and porcelain insulators:

Installs and adjusts dies, cores and rings in extruding machine according to product specifications, using hand tools and measuring instruments. Selects and mounts cutter assembly according to type and size of product, using hoist and hand tools. Sets controls on automatic cut-off knives or wires to cut extruded clay to specified dimensions. Starts mixing machine and adjusts valves to feed and regulate flow of

ingredients into machine. Starts pug mill. Turns valves to add water and oil to mixture or to increase vacuum in pug mill. Starts automatic extruding and cutting machines. Examines product to detect deviations from specified consistency, size and shape, using fingers, measuring instruments and product sample. Adjusts valves and controls until product meets specifications.

May extrude specific product or operate individual machine and be designated accordingly; for example, Drain-Tile-Auger-Machine Operator
Pug-Mill Operator

8155-130 HOT-PRESS OPERATOR(cement, stone & clay)
DPT:662
clay-press operator.
GED: 3 SVP: 5 EC: I 3 5 7 PA: H 4 5 6 7

Operates mechanical or hydraulic press that hot presses pugged clay to form porcelain ware such as electrical insulators.

Reads work order and withdraws or directs withdrawal of specified moulds and die-plunger from storage. Inserts die-plunger into head of press, using hand tools. Directs worker to place pugged-clay bats of specified size in moulds and set moulds in automatic pressing machine. Adjusts gas or kerosene-oil jet to heat die-plunger to high temperature. Starts machine and monitors automatic sequential cycle of painting oil on clay bat to prevent adhesion of die-plunger, of ramming hot die-plunger into clay-filled mould to press clay into shape of mould and form core-cavity, and of pneumatically ejecting formed greenware from mould onto conveyor for transportation to dryer. Trims excess clay from formed greenware before ejection, using knife. Examines production-run pieces periodically to ensure conformance to specifications, using calipers and scale. Stops machine if blockage or malfunction occurs, and removes blockage or repairs malfunction.

May remove mould containing formed greenware from machine manually and place on conveyor for transportation to dryer. May write daily summary of production time versus down-time for production control purposes.

8155-134 INSULATOR BUILDER(cement, stone & clay)
DPT:684
slip joiner.
GED: 3 SVP: 5 EC: I PA: M 2 3 4 7

Stacks, seats and bonds together preformed green (unfired) insulator sections to build large electrical insulators:

Reads work order and blueprint to determine product requirements and specifications. Selects preformed, green insulator sections according to specifications. Moves insulator sections from storage area to assembly area, using hand truck. Inspects sections for evidence of damage. Repairs damaged sections, using pugged clay, slip (liquid clay) and sponge. Rejects and replaces irreparable sections. Fills under-recess of first section to square off bottom, using pugged (plastic) clay and bonding slip. Smooths squared-off bottom of first section, using trowel and wet sponge, and places on assembly cart. Applies slip manually to upper surface of first section to act as bonding agent. Works slip into clay to increase effectiveness of bond, using fingers. Fits second section of insulator over first section and rotates manually to seat and bond sections and adjusts to specification, using template or square. Stacks, seats and bonds additional sections until insulator of specified requirements is assembled, using platform to reach upper sections. Manipulates and adjusts stacked sections manually to ensure sections have been seated according to specifications, using plumb line and scale. Wipes excess slip from assembled insulator, using wet sponge. Pulls cart holding assembled insulator to glaze-spraying area.

May position uncured circular insulator on turntable, using a hoist and apply various shaped scrapers, abrasive cloths and wet sponges over surface of revolving insulator to remove rough spots and mould marks.

8155-138 RAM-PRESS OPERATOR(cement, stone & clay)
DPT:682
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates hydraulic ram-press to form pottery ware:

Positions plaster die on bed of press, using hoist. Clamps upper and lower halves of die to ram and bed of press and connects air hose to die, using hand tools. Aligns die, using pins, jacks and measuring devices such as calipers and rule. Places pugged (plastic) clay of specified size on die face and presses control to lower ram to shape

ware and raise ram automatically. Holds hands under ram to receive ware as it is released from die. Inspects ware for specified thickness and adjusts position of die as required, using hand tools. Places ware on conveyor for further processing. Removes moisture from die, using sponge or air gun and removes scrap clay, using knife.

May operate small pug mill and extruder to produce pugged clay. May raise and lower ram manually.

8155-142 CLAY-STRUCTURE MOULDER AND INSTALLER(cement, stone & clay) DPT:684
GED: 3 SVP: 4 EC: I 3 PA: M 3 4

Moulds floaters, shut-off bars and other clay structures and positions them in tank furnaces, drawing kilns and other glass forming equipment:

Shovels lump clay into pug mill and adds water. Starts pug mill that mixes materials to specified consistency. Pulls lever to dump clay mixture into wheelbarrow and pushes wheelbarrow to moulding area. Bolts wooden sections of specified mould together, using wrench, and lines mould with paper to prevent adherence of clay to mould. Dumps clay into mould and tamps with hand tool. Dismantles mould and covers clay structure with damp burlap to prevent rapid drying. Smooths and finishes structures to specifications, using hand tools, square and rule. Moves clay structures, using fork lift truck, and positions them in tank furnaces and drawing kilns, using chain hoist and hand tools. Inserts air hose into cleanout openings of tank furnaces and opens valve to blow foreign material from checkers (air baffles).

8155-144 STOPPER MAKER(cement, stone & clay) DPT:684
stopper-rod maker.
GED: 2 SVP: 4 EC: I 3 4 7 PA: M 3 4

Assembles refractory stoppers used to plug pouring nozzles of steel ladles:

Mixes specified amount of refractory mortar powder with water, using trowel or hoe. Places steel rod in vice or hydraulic press and bends to specified shape, using sledge hammer or by operating press. Fastens stopper head to rod with metal pin. Spreads mortar on rod, using trowel, and slides brick sleeves over rod to form refractory jacket. Tightens locknuts holding assembly together, using wrench. Spreads mortar on jacket to seal sleeve joints. Hoists stopper and rod assembly on drying rack and pushes rack into oven to dry mortar. Pulls rack from oven and pushes to storage area.

8155-146 HAND MOULDER(asbestos & min. wool; cement, stone & clay; non-metal. min. prod., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4

Moulds abrasive and refractory products such as blocks, bricks, pipes and tiles, using hand-moulding equipment and hand tools:

Selects mould from storage according to work order. Brushes mould cavity with oil to prevent product from adhering to mould. Packs moulding mixture or lays soft strip of asbestos sheeting or abrasive into mould and tamps, using hand, mallet or pneumatic ramming tool. Removes excess mixture from top and sides of mould, using straight-edge or knife. Removes product from mould after designated period of time and smooths product, using hand tools. Throws crushed quartz or sand on casting or moulded abrasive to prevent bonding during subsequent drying operation. Stencils or uses chalk to mark identifying code on product. Cleans used moulds, using scraper and brush.

May transfer product to kilns, using handtruck. May operate extruding machine to form special products. May be designated according to product moulded or method used; for example,

Brick-Moulder, Hand
Pipe-Fittings Moulder
Tamp-Moulder, Refractory
Tile-Moulder, Hand

8155-150 HAND PRESSER(cement, stone & clay) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4

Presses damp plastic clay by hand into shape of mould to form irregularly-shaped pottery and porcelain ware such as bowls, trays and novelty pieces:

Selects mould from storage according to work order. Places sheet of clay on mould, raising edge of clay to let air escape. Presses clay to conform to mould contours, using hands and fingers. Smooths and

trims outside of clay into specified form, using wet sponge, trimming knives and contour gauges. Sets formed piece aside to dry.

8155-154 SAGGER MOULDER(cement, stone & clay)

DPT:684

GED: 2 SVP: 3 EC: 1 PA: M 3 4

Grinds, combines and forms refractory clay material to make saggars, using grinding machine, vats and moulds:

Tends machine that grinds broken saggars into grog (small pieces). Shovels grog and refractory clay, in specified proportions, into combining vat. Turns valve manually to admit water into combining vat and permits mixture to soak for several days to homogenize into semi-liquid state. Stirs mixture, using hand paddle, and adds water or clay to obtain required specific gravity. Verifies consistency visually prior to mixture being pressed and extruded by other workers into rolls of pliable refractory clay. Cuts and weighs sufficient clay from roll for one sagger. Lays part of weighed clay into circular mould and remainder into rectangular mould and pounds into shape of moulds, using maul, to form sagger bottom and side. Peels sagger bottom and side from moulds. Fits bottom and side into shaping mould and crimps edge of side to bottom, using fingers and water, to form sagger. Trims and smooths surface of sagger, using hand knife, wooden paddle and wet sponge. Collapses shaping mould and strips sagger from mould, using spatula. Lifts sagger onto rack for subsequent drying and firing.

8155-158 ARTISTIC-OBJECTS CASTER(cement, stone & clay)

DPT:684

GED: 2 SVP: 3 EC: 1 PA: M 4

Casts plaster-of-Paris in moulds to form artistic objects such as religious statuary, figurines and novelties:

Mixes plaster and water manually in container according to formula to obtain required consistency, using a spatula. Assembles and secures together sections of mould, using cord or clamps. Inserts wires, tubing or tow into mould cavity to reinforce casting when necessary. Pours plaster mixture into mould. Shakes mould to distribute plaster layer on inside of mould and pours off excess mixture. Repeats process after each layer hardens until a specified casting thickness is attained. Disassembles mould and removes casting. Applies plaster paste to fill holes and defects in casting, using spatula. Smooths surface of casting, using scraping tool and sandpaper.

8155-162 GREENWARE FINISHER(cement, stone & clay)

DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4

Trims and smooths green (unfired) pottery and attaches handles preparatory to glazing or firing by performing any combination of the following duties:

Positions circular pieces such as plates, cups and bowls on revolving spindle. Manipulates hand trimming knives over contours of spinning ware surface to remove rough spots and mould marks. Presses moist sponge against contours of spinning ware to smooth surface. Positions irregularly shaped pieces, such as non-circular jugs, cups and bowls, on trimming table. Manipulates hand trimming knives and wet sponge over irregular surface of ware to remove rough spots and mould marks, and to smooth surface. Trims ends of handles or knobs to fit ware, using hand trimming knives. Dips end of handle or knob in slip (semi-liquid clay) and presses onto specified position on greenware. Trims and smooths handle or knob joint using hand knives and a wet sponge preparatory to glazing firing.

May be designated according to specific task performed; for example, Handle Sticker
Pottery Trimmer

8155-166 JUNCTION MAKER(asbestos & min. wool; cement, stone & clay)

DPT:684

pipe-fitting maker.

GED: 2 SVP: 3 EC: 1 7 PA: M 3 4

Cuts and joins two sections of uncured pipe such as drain tile or sewer pipe at specified angles to form junctions and fittings:

Places template around end of first pipe section. Cuts along template to form specified angle, using knife, wire cutter or saw. Roughens cut edge of first pipe and side of second pipe where joint is to be made, to facilitate coupling, using tile-maker's comb. Fits cut edge of first pipe

to second pipe manually, using fitting fixture and end blocks. Moulds plastic clay, cement or epoxy resin manually around joint to fix and seal junction. Cuts hole in second pipe at inner junction, using knife. Smooths joint at inner and outer junction, using spatula, trowel and wet sponge. Places junction on curing rack.

May bend green pipe manually to form pipe fitting. May cut and join pipe made of specific material and be designated accordingly; for example,

Asbestos-Cement-Pipe Junction Maker

Clay-Drain-Tile Junction Maker(cement, stone & clay)

8155-170 MOULD FILLER(cement, stone & clay)

DPT:684

batter-out.

GED: 2 SVP: 3 EC: 1 5 PA: M 4

Spreads pugged clay in moulds, preparatory to forming into pottery and semi-porcelain ware, using one of the following methods:

1. Centers machine-cut clay blank manually on rotating horizontal wheel of batting-out machine. Pulls lever to lower press that flattens clay blank into clay bat. Throws bat forcefully into jigger mould that forms flatware pieces such as plates and saucers. Pulls lever to lower tool that spreads clay firmly and free from folds and voids over jigger mould. 2. Shapes machine-cut clay blank manually into ball. Throws ball forcefully into jolly mould that forms hollow ware pieces such as cups and vases. 3. Throws machine-cut clay blank into press mould or spin mould. Spreads clay firmly and free from folds and voids manually in mould. Pushes filled moulds on roller conveyor to automatic or semi-automatic machines that form ware, either by press moulding or spin moulding.

8155-174 POTTERY-AND-PORCELAIN-WARE

CASTER(cement, stone & clay)

DPT:684

GED: 2 SVP: 3 EC: 1 PA: M 4

Casts pottery and porcelain ware such as jugs, cups and toilet bowls in moulds:

Fills moulds with slip (semi-liquid clay), using hose from supply tank or by inserting funnel into mould openings and pouring in slip from container. Trims excess clay from inside mould openings and separates mould sections, using hand tools. Removes the green (uncured) castings when observation indicates they are sufficiently firm to handle. Trims and smooths casting surfaces to remove excess clay and mould marks, using knives and wet sponge. Places castings on boards or skids to dry. Cleans used moulds, using air hose and wet sponge.

May prepare and mix ingredients to produce slip or liquid refractory clay solution according to specifications, using grinding and agitating machines. May cast slip or refractory clay solution to form specific products, such as handles and kiln-furniture (setters and pedestals) and be designated accordingly; for example,

Handle Caster

Kiln-Furniture Caster

8155-178 SLIP SEALER(cement, stone & clay)

DPT:684

joint-and-seal maker.

GED: 2 SVP: 2 EC: 1 3 6 7 PA: H 4

Forms joint and seal on end of sewer pipe, using mould:

Removes dirt, dust or grease from length of green sewer pipe, using air hose, cleaning rags and kerosene. Examines pipes visually for straightness, chips or cracks and rejects those not meeting specifications. Loads pipe upright on pallet, using pneumatic hoist. Brushes adhesive compound onto one end of pipe. Affixes joint mould to adhesive on end of pipe. Lifts pot containing hot liquid tar and pours tar into mould to form combined pipe joint and seal on end of pipe into which another sewer pipe end can be fitted and sealed. Lifts loaded pallet onto handtruck, using pneumatic hoist. Pushes handtruck to curing oven. Removes mould from end of cured pipe, using hand tools. Trims excess tar from joint and seal, using a knife.

8155-182 FLOWERPOT PRESSMAN(cement, stone & clay)

DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends automatic power press to form clay flowerpots:

Attaches specified shaping die to press and adjusts ram travel, using hand tools. Starts press which operates on cycle. Throws ball of clay into die. Lifts pot from die manually after press has automatically formed flowerpot. Places pot on ware board.

8155-186 JIGGERMAN HELPER(cement, stone & clay) DPT:686
GED: 2 SVP: 2 EC: 1 5 PA: H 3 4

Compacts clay into moulds preparatory to jiggering and removes residual clay from greenware during jiggering operation: Conveys moulds to and from storage, and clay blanks from pugging machine, using handtruck. Compacts clay manually into moulds ensuring freedom from folds, cracks and trapped air. Places clay-filled mould in jiggering machine. Pulls residual clay, resulting from jiggering operation, away manually from greenware being formed. Sets mould containing formed greenware on conveyor to dryer or on rack to dry. See also definition for term title, 02-160 HELPER (any ind.). May help fabricate and repair shaping tools and templates.

Glass Forming Occupations
8155-210 through 8155-270

8155-210 MASTER-GLASS BLOWER(glass) DPT:061
GED: 5 SVP: 8 EC: 1 3 6 7 PA: L 4 5 6 7

Conceives style and form for desired artistic object, and blows and sculpts semi-finished free-form glass objects into final aesthetic form, using blowpipe and artisan's hand tools and equipment: Conceives shape into which artistic object is to be formed. Observes batch of molten glass in melting furnace to determine readiness for use in production process, employing knowledge of glass characteristics. Gathers amount of molten glass on blowpipe and blows and shapes it into semi-finished, free-form, prototypic-glass object to demonstrate to underworkers and helps the size of gather (gob of molten glass) required and the extent to which the object is to be semi-finished for further forming. Receives from underworker a semi-finished production-run glass object that has been reheated to a desired viscous condition on punty or blowpipe. Manipulates punty, or blows into and manipulates blowpipe, to prevent semi-finished object from sagging, to maintain density and colour blending of glass, and to shape object into desired finished proportions, employing traditional skills of the glass artisan. Reheats, shapes and forms individual parts of object to perceived extension and form, using specialized self-developed artisan's hand tools. Draws, shapes and shears extended sections of object to proportionate size and dimensions in relation to main body of object, using artisan's hand tools. Assigns tasks and gives direction to underworkers and helpers.

8155-212 SCIENTIFIC-GLASS-APPARATUS BLOWER(glass; scient. & ind. equip., n.e.c.) DPT:261
GED: 4 SVP: 8 EC: 1 3 6 PA: L 4 5 6 7

Develops specifications for scientific apparatus, and blows and shapes glass tubing to form apparatus and components, such as flasks, measuring instruments and vacuum pumps: Examines sketches and drawings and develops scientific apparatus to meet requirements. Correlates specifications with knowledge of factors such as effects of heat, vacuum and corrosive chemicals, to determine type of glass to be used. Heats glass tubing to viscous condition, using gas flame. Blows and draws heated tubing into specified forms, using compressed air or own breath, and hand tools. Shapes, bends or joins sections of formed tubing, using glassworker's tools and continues blowing to ensure bends and joints have correct thickness and diameter and to obtain invisible joint. Measures product to verify dimensions, using micrometers, calipers and rule. Assigns tasks and gives direction to helper. May insert metal flanges, tubes and wires into molten glass forms. May heat and shape glass around metal components to bond glass to metal, using glassworker's tools.

8155-214 GLASS-FORMING-MACHINE SET-UP MAN(glass) DPT:360
GED: 4 SVP: 8 EC: 1 5 6 PA: M 3 4 5 6 7

Sets up, adjusts and repairs automatic feeding, flowing and forming machines and equipment that form bottles and other glass products from molten glass: Reads set-up instructions to determine machine parts and mechanical adjustments required. Installs moulds and mould components, such as plungers and bottom plates, and replaces cams on machines, using hand tools. Adjusts duct orifices to control size of molten glass gob fed to mould. Adjusts valve on furnace to regulate temperature of molten

glass according to specifications and production requirements. Changes lehr conveyor gears and rheostats according to specifications to control annealing time of formed glassware. Sets cams and pusher bars that control ejection of sub-standard products. Measures glass products to verify that machines produce according to specifications, using calipers and gauges. Repairs and adjusts machines while in operation, using hand tools, calipers and gauges. Allocates assignments and directs activities of helpers. Prepares reports on set-up and repairs performed or contemplated.

8155-218 UNDERMASTER GLASS BLOWER(glass) DPT:361
GED: 4 SVP: 8 EC: 1 3 6 7 PA: L 4 5 6 7

Blows molten glass into shape or semi-finished free-form object, using a blowpipe: Receives gather (gob of molten glass) on blowpipe from helper. Blows into pipe to inflate gather while rotating to form basically desired shape, thickness, colour, density, shading and size of object. Manipulates, rotates and positions pipe in relation to weight of gather to shape sides and bottom of object in accordance with prototype. Attaches appropriately shaped punty to end of semi-finished glass object for reheating and final shaping. Assigns tasks and gives direction to helper.

8155-222 SPIN-MOULD-MACHINE SET-UP OPERATOR(glass) DPT:380
GED: 4 SVP: 7 EC: 1 3 5 6 PA: L 3 4 7

Sets up and operates automatic spin-mould machine to form glass articles such as television picture tubes: Selects moulds according to product specifications. Installs moulds and mould rings in machine, using wrenches. Positions, connects and clamps air, gas and water hoses, and gas burners, using hand tools. Adjusts controls to regulate mould cycling and spin rates, and temperature. Adjusts flow valve and shear timer to regulate delivery rate, weight and shape of gob delivered from feeder into moulds, according to specifications. Sets lubrication valves to prevent adhesion of molten glass to feeder chutes and moulds. Presses switch to start machine. Monitors delivery of gobs through feeder chutes into spinning moulds, distribution of molten glass over mould surface by centrifugal force, and automatic cycling to ensure machine is operating according to set-up parameters. Reads gauges to verify co-ordination of machine functions. Weighs, measures and inspects production sample to assess conformity to specifications, using scales, gauges and visual verification. Adjusts valves and controls within close limits to correct deviations from specifications. Lubricates and cleans machine at specified intervals.

8155-226 GLASS-BLOWING-LATHE OPERATOR(glass; scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 8 EC: 1 3 6 PA: L 4 5 7

Joins and shapes glass tubing according to specifications, using glass-blowing lathe: Reads work order to determine mandrels and glass parts required to meet specifications. Selects, inserts and clamps mandrels in head and tailstock of lathe, using wrenches. Selects, inserts and clamps glass parts to be joined or shaped in chucks, using mallet and wrenches. Turns controls to start lathe and adjust rotation speed. Lights fixed jets and hand torches and turns gas valves to adjust height and colour of flames and obtain specified temperature. Turns handwheels to move head and tailstock and bring workpiece in contact with flames. Blows through hose connected to center of chuck to maintain pressure within tube or to shape workpiece. Selects and manipulates spatula, hand torches and tips, and glass rods to shape, seal, splice, imbed and weld rotating parts according to specifications. Anneals joined or shaped areas, using hand torch and fixed jets. Turns handwheels to move head and tailstock and stretch or separate heated workpiece to specifications. May move glass tube over flame manually and blow it into specified shape.

8155-230 GLASS BLOWER(glass) DPT:684
GED: 3 SVP: 7 EC: 1 3 6 PA: L 4 7

Blows molten glass into standard shaped glassware, performing any combination of the following duties: Dips end of blowpipe into molten glass to gather amount required for object to be made. Blows through pipe to inflate gather while rotating

pipe manually to prevent sagging and to attain desired standard free-form shape and size. Inserts gather into hinged mould before blowing when specific mould-form shape and size is required. Strikes neck of blown article with metal bar to detach from blowpipe. May work to drawings or other specifications. May specialize in making particular objects and be designated accordingly; for example, Bottle Blower

8155-234 GLASS-NOVELTY MAKER(glass) DPT:684
 glass-art maker.
 GED: 3 SVP: 7 EC: I 6 PA: L 4 7

Shapes heated glass rods or tubes into ornamental objects and novelties, such as dishes, animals and flowers, performing any combination of the following duties:

Selects solid glass rod and holds over flame, using tongs, to heat to viscous condition. Pushes ends of rod towards center to enlarge middle and form principal part of object. Melts or cuts off one end of rod, using flame or hand tools. Holds other end of rod and draws, shapes and shears principal part to sculpture objects, using hand tools and employing knowledge of glass sculpturing. Selects suitable glass tube and heats one end over flame. Blows into tube to form desired shape employing knowledge of glass blowing. Allows tube and shape to cool. Heats opposite end and blows to complete principal part to desired design, body or shape. Heats end of suitable glass rod until bubble is formed. Places bubble on principal part at appropriate location to fuse as an appendage. Sculptures appendage to desired shape, using hand tools.

May use blowing lathe to blow large objects. May sculpture custom plaques and insignia. May blow custom tubular neon signs such as animals, product, or service depictions.

8155-238 GLASS-FORMING-MACHINE OPERATOR(glass) DPT:662
 glass-press-and-blow-machine operator.
 GED: 3 SVP: 6 EC: I 3 5 6 7 PA: L 3 4 7

Operates and controls automatic machines that press or blow molten glass in moulds to form or shape containers such as bottles, jars and drinking glasses, performing any combination of the following duties: Positions and bolts cast-iron moulds to machine hanger arms as directed, using wrenches. Positions and clamps machine fixtures, such as plungers, plunger pins, neck rings, and air and gas hoses, to facilitate forming function of moulds, using fixed gauges and hand tools. Bolts specified delivery chutes and transfer arms in position on machine to guide and move gobs of molten glass from forehearth through machine processes. Adjusts set screws and air valves to control opening and closing of moulds. Adjusts thermostatic control to regulate temperature of molten glass in forehearth according to specifications. Adjusts valve to regulate feed of air pressure to moulds in glass-blowing machine. Adjusts control to regulate timing of plunger in glass-pressing machine. Adjusts controls to regulate mould temperatures and turntable rate. Adjusts flow valve and shear timer to regulate delivery rate, weight and shape of gob delivered from feeder into moulds, according to specifications. Adjusts dampers to control flow of air to cool mould equipment and glassware. Presses switch to start machine. Observes operation of machine to verify co-ordination of functions. Sprays or swabs moulds, feeder chutes and baffle plates periodically with oil solution to prevent adhesion of glass. Weighs, measures and inspects production sample to assess conformity to specifications, using scales, gauges and visual verification. Adjusts valves and controls to correct deviations from specifications. Lubricates and cleans machine at specified intervals. Gives assignments and directions to helper.

May operate machine that blows, presses or produces specific product and be designated accordingly; for example,
 Bottle-Machine Operator
 Glass-Blowing-Machine Operator
 Glass-Pressing-Machine Operator

8155-242 NEON-SIGN BENDER-PUMPMAN(misc. prod. fab., n.e.c.) DPT:681
 GED: 3 SVP: 6 EC: I 6 PA: L 4 7

Heats and bends glass tubing to form scroll of neon signs, pumps inert gas into tubing and fits electrodes to tubes, according to specifications: Secures asbestos pattern to workbench. Selects glass tubing of specified diameter and colour and cuts tubing to required length, using ruler and file. Places glass tube on pattern and marks bend locations,

using crayon. Places cork stop into one end of tubing and rubber hose over opposite end. Lights torch, adjusts flame for optimum temperature, applies flame to tubing and rotates tube to obtain uniform heating. Blows into hose to prevent collapse of tubing and applies pressure manually, to bend tubing. Superimposes bent tubing over asbestos pattern to verify accuracy. Fuses electrodes into ends of formed tubing, using torch. Fuses glass tube to admit inert gas onto scroll and glass traps to contain mercury. Consults specification to determine gas to be used and colour of tubing. Starts roughing pump (used for preliminary low vacuum pumping) to remove air and moisture from tube and adds mercury to glass traps when specified. Connects electrical supply to electrodes, switches on supply and increases voltage gradually, using control, to remove moisture and air. Connects high vacuum pump to tube, starts pump and shuts off when required vacuum is obtained. Connects gas cylinder to glass tube to admit specified gas and disconnects when designated pressure is reached. Tips mercury trap (used with certain gas) to release mercury into tube. Seals tubing, using torch, and connects to high voltage supply to age scroll.

May specialize in a specific activity and be designated accordingly; for example,
 Neon-Sign Pumpman
 Neon-Tube Bender

8155-246 GLASS-FORMING-MACHINE UPKEEP MAN(glass) DPT:684
 GED: 3 SVP: 6 EC: I 5 6 PA: M 3 4

Assists set-up man to set up, adjust and repair automatic feeding, flowing and forming machines and equipment that form bottles and other glass products from molten glass:

Removes and replaces glass-forming moulds and components and adjusts shears and furnace channel openings according to instructions, using hand tools. Swabs or brushes feeder chutes and moulds with oil or lubricating compound to prevent molten glass from adhering. Lubricates machines and equipment, using oil can. Transfers moulds to and from repair shop, using a handtruck.

8155-250 GLASS-DRAWING-MACHINE OPERATOR(glass) DPT:362
 drawing-kiln operator.
 GED: 3 SVP: 5 EC: I PA: L 4 5 7

Operates glass-drawing machine to draw molten glass into continuous flat sheet:

Reads work order to determine requirements and specifications. Sets rheostat to control speed of kiln rolls that draw glass sheet of specified thickness. Adjusts valves to regulate gas-firing of edges of glass sheet to prevent slippage of sheet from guide wheels. Receives and records thickness-gauge readings periodically. Adjusts speed controls on panel-control-board to correct deviations from thickness specifications. Positions asbestos pads on sides of cooling jacket in kiln to correct irregular thickness in glass sheet, using iron rod. Observes glass sheet through kiln peephole to detect defects such as stones and blisters. Opens or directs opening of kiln rolls to allow passage of defective area to prevent break in glass sheet. Closes lower roll of drawing kiln to prevent broken glass sheet from collapsing into kiln. Lights auxiliary gas jets in kiln to heat glass sheet below break and stop run of break.

8155-254 YARDAGE CONTROLMAN(syn. fibres) DPT:362
 GED: 3 SVP: 5 EC: I 4 5 PA: L 4 5 6

Regulates temperature of bushings on fibreglass forming machine to maintain specified yardage-per-pound and diameter of extruded fibreglass strand:

Reads work order to determine specifications for fibreglass strand being formed. Monitors bushing control panels, temperature charts and indicators to determine if temperatures of furnace bushings, molten glass over bushings, forehearths and canals meet specifications. Obtains test skein of sliver from production run. Dries skein for specified time in electric furnace. Weighs dried test skein and converts weight to yards-per-pound to determine deviations from specifications, using yardage conversion chart. Turns digital dials on bushing control panel to regulate temperatures of bushings and consequently vary diameter of strand to meet yardage-per-pound specifications. Reads winder tachometers to ensure specified pre-set speeds are maintained. Informs electro-mechanical repairman to adjust winders if deviations from pre-set speeds are observed. Records data in

yardage control log; such as date, crew, time of temperature readings and yardage calculations, adjustments made and type of sliver formed.

8155-258 GATHERER(glass) DPT:684
GED: 2 SVP: 4 EC: I 3 6 PA: L 4 7

Dips punty or blowpipe head into tank furnace to gather gob of molten glass for processing by other workers: Immerses head of punty (iron rod) or blowpipe into molten glass in furnace. Rotates punty or blowpipe to gather gob of molten glass on head. Removes punty or blowpipe from furnace. Twirls gob in container of alkaline solution or in cavity of wet wooden block to form thin skin on gob to prevent punctures in glassware during subsequent blowing or pressing. Twirls punty of blowpipe and blows through blowpipe to maintain gob in globular form. Hands punty or blowpipe to other worker for further processing of molten glass.

8155-262 FIBREGLASS-MACHINE TENDER(syn. fibres) DPT:685
bushing tender.
GED: 2 SVP: 3 EC: I 4 5 6 PA: L 4 7

Tends one or more machines that form fibreglass filaments from molten glass and combine filaments into sliver strands: Pulls fibreglass filaments extruded through bushing over sleeve and through binding solution. Turns valve to regulate flow of binding solution to sleeve. Pulls filament into groove of graphite shoe that binds filament into single strand of sliver. Passes strand through opening in floor to be wound on tubes. Monitors machines to detect malfunctions or defects, such as faulty binder applicators, clogged bushings, beads and bead straps. Stops machine when defects or malfunctions occur. Removes beads or bead straps from bushing tips to unclog bushing, using a wire pick. Reports defective product or malfunction of machine. May fill furnace hopper with glass marbles and adjust feed mechanism.

8155-266 GLASS-FORMING-MACHINE-OPERATOR DPT:685
HELPER(glass)
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: L 3 4

Helps machine operator to form glass containers and load them into Lehr (furnace), performing any combination of the following duties: Lift containers from glass-forming machine for inspection as directed, using tongs. Tends feed conveyor that delivers production containers from glass-forming machine to Lehr automatic-loading mechanism. Turns control dial as directed to synchronize action of loading mechanism with movement of feed and Lehr conveyors. Observes operation of loading mechanism to detect malfunction. Removes container causing malfunction to prevent jamming. Lubricates and cleans machines. Cleans broken glass from work area, using broom and shovel. See also definition for term title, 02-160 HELPER (any ind.). May tend glass-forming machine for short periods during absence of operator.

8155-270 HOT-GLASS WORKER(glass) DPT:687
GED: 2 SVP: 2 EC: I 3 6 PA: L 3 4 7

Helps glass formers in the production of glassware from molten glass, performing any combination of the following duties: Balances gather (gob of molten glass) on blowpipe. Blows through and simultaneously rotates blowpipe to maintain gather in globular form for blocking, redipping or final shaping. Manipulates controls to open hinged moulds that press gather into glassware. Attaches blower head to opening of blank-filled mould and turns valve to admit compressed air that shapes blank to mould contour. Removes glassware from mould, using pincers or fork. Catches ware from glass blowers and carries it to reheating furnace or glazing machine. Reheats blown or pressed glassware in furnace to fire-polish and make malleable for further processing. Adjusts fans as directed to control ventilation that blows fire blast back into furnace and cools snap handle. Strikes glassware at specified position to crack off (break) ware from blowpipe, using a metal bar. Inspects glassware for defects, such as cracks, chips and malformations. See also definition for term title, 02-160 HELPER (any ind.). May perform specific duty and be designated accordingly; for example,

Blow-Up Boy
Carrying-In Boy
Catching-Out Boy
Glass Blower Helper
Mould Holder
Turn-Out Boy
Warm-In Boy

Stone Forming Occupations
8155-310 through 8155-422

8155-310 DIAMOND-ABRASIVE-WHEEL MAKER(non-metal. DPT:381
min. prod., n.e.c.)
diamond-wheel moulder and finisher.
GED: 4 SVP: 7 EC: I PA: M 4 7

Operates machines to form wheel cores and to form, cure and finish diamond abrasive wheels:

Reads work order and blueprint to determine production and setup requirements. Selects wheel core moulds according to specifications. Installs wheel core mould in sintering press (for sintered metal core) or hot press (for plastic core), using hand tools. Weighs out sinter material or plastic powder, using scales. Pours sinter or plastic compound into mould cavity and levels, using a spatula. Starts hydraulic pump and adjusts valves to obtain specified press temperature and pressure. Presses buttons to mould-press sintered metal core or plastic core. Removes core from press manually and inspects for defects. Installs core on lathe, using hand tools. Sets up and operates lathe to machine outside and inside diameters, slots and recesses, and to develop arcs and bevels according to specifications. Installs machined core in drill press and manipulates controls to drill or tap core according to specifications. Verifies dimensions of core, using micrometer and calipers. Selects specified abrasive wheel mould and installs in press. Positions and centers core in mould, using a centering scale. Pours specified amount of diamond abrasive compound into mould around the core and levels, using a spatula. Starts hydraulic pump and adjusts valves to obtain specified pressure. Closes press and monitors forming operation throughout automatic cycle. Removes abrasive wheel from press and places in curing oven. Sets curing oven dials to control temperature and time according to specifications and monitors automatic curing cycle. Examines wheel for cracks at end of curing cycle. Installs wheel on lathe or lapping table, depending on shape, to finish. Sets up and operates lathe or lapping table to abrade wheel to specified final dimension. Verifies dimensions of wheel, using micrometer. Writes identifying and operating data on core body, using an engraving tool.

May mix and blend ingredients to produce homogeneous diamond abrasive compound. May attach mounting pads to wheel and pack for shipment.

8155-314 ASBESTOS-CEMENT-PIPE-MACHINE SET-UP DPT:330
MAN (asbestos & min. wool; cement, stone & clay)
asbestos-cement-pipe-machine lead hand.
GED: 3 SVP: 7 EC: I 4 5 6 PA: M 4 5 6 7

Sets up and adjusts asbestos-cement-pipe forming machine according to specifications and supervises activities of crew engaged in operating machine:

Reads work order to determine product specifications and machine setup requirements. Selects mandrel according to diameter specified for inside of pipe. Supervises activities of workers positioning and securing mandrel in machine. Adjusts valves to control the supply of dry mix and water into programmed blending unit to produce slurry of specified consistency. Adjusts valves to dehydrate slurry according to specifications as it passes through vacuum box. Sets dials according to specifications to control speed of felt conveyor that bears slurry. Adjusts pressure roller controls that position slurry-bearing felt conveyor against spinning mandrel to produce pipe walls of specified thickness. Adjusts ratio of water to dry mix, speed of agitators, speed of felt conveyor, roller pressure and action of vacuum box to maintain required cohesion of slurry on spinning mandrel. Slaps production-run samples with hand and listens to ring to gauge hardness, inspects for straightness and dimensions, using a straightedge and calipers, and adjusts machine controls accordingly. Selects stencils used to code various types of finished pipe. Trains new machine-crew. Participates in and directs crew in maintenance and cleaning duties. Writes

production records to show types and amounts of material used, operating times and production realized.

May adjust oven temperature controls in accordance with specifications for size of pipe being produced to facilitate core (mandrel) pulling.

8155-318 ASBESTOSBOARD-MACHINERY SET-UP

MAN(asbestos & min. wool; cement, stone & clay)

DPT:460

GED: 3 SVP: 7 EC: I 5 6 PA: M 4 5 6 7

Sets up and adjusts machinery to fabricate asbestos-cement wallboard: Reads work order to determine product specifications and set-up requirements. Sets up blending and mixing machines to dry-blend and wet-mix ingredients according to formula, using gauges and hand tools. Sets up forming-machine conveyors, rollers and cutters to form asbestosboard of specified thickness, length and width, using rulers, gauges and hand tools. Adjusts wheels to cut boards smoothly. Sets programmed controls to regulate flow of ingredients through blending and mixing machines into asbestosboard forming machine. Measures thickness of formed board, using a micrometer. Adjusts mixing-machine water valves to vary consistency of mixture, and forming-machine roller controls to vary line-speed of forming machine until thickness measurement meets specifications. Directs activities of workers feeding, operating and off-loading series of asbestosboard forming and fabricating machines.

May set up other asbestosboard fabricating processes, such as curing, repressing, corrugating, laminating and hand moulding.

8155-322 PLASTERBOARD-MACHINE OPERATOR(cement, stone & clay)

DPT:462

GED: 2 SVP: 6 EC: I 7 PA: M 4 5 6 7

Operates machine that envelops slurry of plaster between paper to laminate continuous plasterboard sheet:

Reads work order to obtain specifications for plasterboard being produced. Adjusts edging bars, rollers, paper guides, glue feeders and chamfering wheels according to specifications, using rulers, gauges and hand tools. Adjusts stenciling machine to ensure markings on boards will be legible and evenly spaced. Starts machine and adjusts controls to regulate flow of slurry from mixing machine through rollers onto undersheet of plasterboard paper. Spreads slurry evenly on undersheet of paper, using pallet knife. Operates machine to envelop slurry between under and upper sheets of paper, and glue-seal plasterboard edges to form continuous plasterboard strip. Inspects plasterboard to ensure conformity to specifications and adjusts machine accordingly. Marks defect information on plasterboard, using chalk. Assigns tasks and gives directions to helpers.

8155-326 ASBESTOS-CEMENT-PIPE SPIN

FORMER(asbestos & min. wool; cement, stone & clay)

DPT:662

asbestos-cement-pipe valve operator.

GED: 2 SVP: 6 EC: I 4 5 6 PA: H 4 5 6 7

Operates spin-forming station on machine that forms asbestos-cement pipes from slurry:

Assists set-up man to change slurry conveyors. Assists set-up man to adjust conveyor tension and centering rolls, conveyor speed, vacuum box controls, and pressure rollers of pipe-forming machine according to specifications. Presses switch to raise and lower split bushing to position and secure mandrel. Presses button to cause pressure roller to spin mandrel. Depresses lever to lower spinning mandrel onto slurry borne on conveyor. Monitors automatic spin forming (laminating) of slurry onto spinning mandrel. Gauges pipe diameter when rotation automatically ceases, using calipers, and adjusts pressure roller movement accordingly. Cuts pipe to specified length, using hand tool. Presses switch to release mandrel and spun pipe from bushing. Inspects pipe for diameter uniformity, using calipers. Slaps pipe with hand to gauge hardness. Assigns duties and gives directions to helpers.

May operate electrolytic stripper and pulling saddle to remove mandrels from pipes. May assist in oiling, cleaning and repair of machine.

8155-330 ASBESTOSBOARD-MACHINE

OPERATOR(asbestos & min. wool; cement, stone & clay)

DPT:682

GED: 2 SVP: 6 EC: I 4 5 PA: L 4 7

Operates machine that forms asbestosboards from slurry (mixture of asbestos, cement, ground marble and water):

Reads work order and sets machine dials for batch weights of slurry and number of batches. Adjusts valves to control water supply to slurry mixing unit. Sets and adjusts vacuum box controls and roller cleaning water sprays. Turns valve to fill tank with slurry and starts machine that transfers slurry onto felt conveyor from rotating tank to forming rollers of machine. Sets and adjusts cutter knives that cut wet asbestosboards formed by rollers, according to specifications. Inspects asbestosboards as they pass on conveyor to detect broken edges and other defects. Removes defective boards from conveyor. Measures thickness of board, using micrometer and corrects variations from specifications by synchronizing speeds of machine units or reports variations.

May clean forming roller by hand, using scraping blade and water.

8155-334 ASBESTOS-CEMENT-PIPE-SPIN-FORMER

HELPER (asbestos & min. wool; cement, stone & clay)

DPT:684

asbestos-cement-pipe gauger.

GED: 2 SVP: 5 EC: I 4 5 6 PA: H 4 7

Helps machine operator to spin-form asbestos-cement pipe, performing any combination of the following duties:

Slings and positions mandrels in yokes (split bushings), using hoist. Gauges end of formed pipe, when rotation automatically ceases, to verify outside diameter, using calipers. Cuts revolving pipe to specified length, using hand tool. Hoists or levers mandrel and pipe to conveyor rails. Rolls mandrel and pipe into electrolytic stripper. Presses switch to pass electric current that breaks bond between mandrel and pipe. Rolls mandrel and pipe into stripping saddle. Hooks one end of mandrel to machine and presses button to remove mandrel from pipe and place it on conveyor. Operates return conveyor to position stripped mandrels at forming station. Examines interior of pipe visually for defects and verifies that thickness of pipe wall is according to specifications, using a scale. Rolls formed pipe to curing-loading station. Lubricates and cleans machine and assists in making repairs. See also definition for term title, 02-160 HELPER (any ind.)

8155-338 PRECAST-CONCRETE MOULDER(cement, stone & clay)

DPT:684

casting man.

GED: 2 SVP: 5 EC: I 5 PA: H 2 3 4

Casts structural concrete products, such as panels, beams and stairways, by performing any combination of the following duties:

Assembles sections of mould on floor or on vibratory table and fastens sections with clamps and bolts. Sprays or brushes retarders on mould to delay setting and prevent adhesion to mould. Pushes buggy of concrete from mixer to casting area. Shovels and spreads concrete or facing aggregate into mould. Positions concrete-filled pouring bucket or delivery conveyor and spout over mould, using a hoist. Strikes trip bar of pouring bucket, or presses button to start conveyor, to discharge concrete into mould. Switches on vibrating tables to settle concrete. Tamps concrete, using electric vibrator. Positions and fastens reinforcing rods, wire mesh, and metal hanger plates and hoisting hooks in mould according to specifications, using rule, gauges, wrenches and clamps. Cuts insulation material, using knife or handsaw, and places insulation between layers of concrete when casting panels. Finishes surface of casting, using screed and trowel. Dismantles mould and removes casting, using crane. Cleans mould sections.

May tend mobile automated machine to fabricate pre-stressed concrete slabs. May assemble moulds and cast specific concrete products and be designated accordingly; for example,

Electrolytic-Cell Maker

Manhole-Casing Maker

Manhole-Cover Maker

Precast-Concrete-Slab Maker

8155-342 PULPSTONE BUILDER(non-metal. min. prod.,
n.e.c.) DPT:684
GED: 2 SVP: 5 EC: I PA: H 4

Fabricates pulpstones by performing any combination of the following duties:

Reads work order to obtain specifications of pulpstone. Selects pulpstone components, such as center sleeve, abrasive wear plates and bushings according to specifications. Cuts segment joints from rubber-based material, using templates and scissors, and assembles bushings in segment joints, using adhesive. Positions bottom mould on floor of pulpstone car and assembles center sleeve, abrasive wear plate and pulpstone metal cage on bottom mould, using hoist. Assembles segment joints and bushings to form face of pulpstone. Signals driver of concrete mixing truck to pour cement into body of pulpstone. Hoists top abrasive plate into position and shapes top end of pulpstone, using mould and trowel. Pushes pulpstone car into oven to cure segment joints.

8155-346 ABRASIVE-WHEEL MOULDER(non-metal. min.
prod., n.e.c.) DPT:464
GED: 2 SVP: 4 EC: I 7 PA: H 4 5 6 7

Operates hydraulic press that moulds abrasive products such as wheels, stones and hones:

Selects mould sections according to product specifications on drawings or work order. Assembles sections to form mould, using hand tools. Installs mould in press, using hoist and hand tools. Opens and adjusts steam valves to heat mould to specified temperature. Brushes release agent on mould cavities. Weighs out specified amount of prepared abrasive material. Pours compound into mould cavities and positions wheel-hubs manually as specified. Manipulates switches, valves and levers to close press and start pressing cycle. Pushes button to open press and collapse mould after specified period. Weighs and inspects pressed product dimensionally, using micrometer, calipers and scale, and visually for defects. Places pressed products on refractory slab for transfer to drying room, curing oven or kiln. Assigns tasks and directs helpers as required.

May mix and blend ingredients to produce abrasive compound. May cure products in oven, press or autoclave according to specifications. May mount and bond steel backing-plates onto abrasive wheels according to specifications, using adhesive, hot press and curing oven. May mix and blend fillers, abrasive grain and rubber bonder into abrasive slab, and cutout abrasive wheel to specifications, using die-cutting machine, and be designated accordingly, Abrasive-Wheel Maker, Rubber

**8155-350 INSULATION-MAT-MACHINE
OPERATOR**(asbestos and min. wool) DPT:662
GED: 2 SVP: 4 EC: I 3 5 PA: L 4 5 6 7

Operates system of machines to produce continuous mats of fibreglass or mineral wool insulation material:

Turns knob on control panel to regulate heat in curing oven according to specifications. Presses switches to start range or system of conveyors, binder and water sprayers, pressure rollers, and automatic winding and cutting machines. Guides sheet of matted fibreglass or mineral wool under pressure rollers, over inspection table and slitting knives, under cutting blade, through binder and water sprayers and curing ovens, and laps end around winding shaft. Patrols work area and monitors range units, temperature gauges, and flow of material through system to detect irregular operation or malfunction of machines and to assess product standards. Examines matted sheets for defects, such as thickness deviations, uncured area, fold and wrinkles. Pulls defective mat from production line manually and deposits in scrap box. Adjusts conveyor speed controls to restore finished product to specified thickness. Assigns duties and gives direction to helpers. May install rolls of paper in winding machine to separate and wrap matting.

**8155-354 CORRUGATED-ASBESTOSBOARD
FORMER**(asbestos & min. wool; cement, stone &
clay) DPT:664
GED: 2 SVP: 4 EC: I 4 5 PA: M 3 4

Operates machine to form flat green (uncured) asbestosboard into corrugated shape:
Installs corrugated mould in head of vacuum hoist-and-forming

machine. Positions hoist-and-forming machine manually over conveyor delivering flat green asbestosboard. Manipulates controls to operate machine that vacuum-lifts flat asbestosboard off conveyor, vacuum-forms board into corrugated shape according to specifications and stacks corrugated board between spacers on pallet preparatory to curing. Inspects asbestosboard to verify that it has been corrugated according to specifications. Turns air pump control dials to adjust vacuum as required. Directs activities of helpers engaged in placing spacers between green corrugated asbestosboards being stacked for curing.

8155-358 CONCRETE, SPIN-CAST MAN(cement, stone &
clay) DPT:664
concrete-spinning-machine operator.
GED: 2 SVP: 4 EC: B 5 6 PA: M 3 4

Spin-casts concrete into precast products, such as pipes and posts, performing any combination of the following duties:

Positions reinforcement rods or wire cage in mould. Secures reinforcement in mould with wire, using hand tools. Places cotton gasket between flanges along length of split mould. Bolts or clamps mould halves together, using hand tools. Positions or signals other worker to position mould on spin-machine, using fork lift or hoist. Adjusts filling-machine controls to regulate feed of wet concrete into mould. Starts spin-machine. Adjusts controls to increase speed of rotation for specified time to compact and smooth concrete. Monitors rollerhead (inner mould cylinder) as it revolves at constant speed for specified time to compact and smooth concrete. Signals worker to move mould to curing area. Covers mould with curing hood and turns on steam, or attaches steam hose to mould and turns on steam, for specified time to cure concrete. Collapses mould when curing is completed, using hand tools. Cleans and oils moulds, using hand tools and brushes.

8155-362 CONCRETE-FITTINGS MAKER(cement, stone &
clay) DPT:684
GED: 2 SVP: 4 EC: I 5 PA: H 3 4

Cuts and cements together cured concrete pipe sections to form odd-shaped fittings:

Positions template on section of pipe to determine cutting line according to specifications. Cuts pipe section along template or cutting line to form Y, T, and elbow fittings, traps and lids, using power saw or chisel. Applies adhesive to sections being fitted together. Positions sections together manually or uses hoist. Seals inside and outside of pipe joints with grout (fluid cement) or mortar, using a hand trowel and brush. Places fitting on pallet or shelf to fix and harden join. Applies epoxy resin to fitting, using brush.

May mix grout or mortar. May keep records of type, size and quantity of fittings produced.

8155-366 CONCRETE-VAULT MAKER(cement, stone & clay)
DPT:684
GED: 2 SVP: 4 EC: I 5 PA: H 3 4

Casts concrete in moulds to form burial vaults:

Positions box, lid and core moulds on pallet, using forklift or hoist. Brushes or sprays moulds with oil to prevent adhesion of concrete. Positions, or fabricates and positions, reinforcing cage in mould, using hand tools. Inserts core into mould, using hoist. Positions concrete-filled pouring bucket or delivery conveyor over mould, using hoist, or moves mould under concrete-mixer spout, using forklift. Strikes trip bar of pouring bucket or spout, or presses button to start conveyor and release and direct flow of concrete into mould. Starts electric or pneumatic vibrator and slides it into mould sockets to settle concrete. Smooths top of concrete, using trowel. Transports concrete-filled mould to curing room, using forklift or hoist. Removes core, using forklift or hoist. Operates hoist or activates pneumatic ejector to separate vault from mould. Transfers vault to spraying area, using forklift or hoist. Stipples outside of vault with wet concrete mixture, using trowel. Forces sealing compound into grooves of vault and lid, using caulking gun. Sprays exterior of vault with specified paint, using spray gun.

May set up mould and melt and pour special asphalt over core to form waterproof liner before casting concrete. May mix concrete to specified consistency.

- 8155-370 CYLINDER COATER**(cement, stone & clay) DPT:664
brush-coater operator.
GED: 2 SVP: 3 EC: B 5 PA: L 4

Operates machine that coats external surface of steel cylinder (pipe) with concrete in the fabrication of pressure pipe: Presses button to open machine chucks. Signals worker to hoist cylinder (previously inner-lined with concrete) in position between chucks. Contracts chucks to secure cylinder in machine. Starts machine to spin cylinder and to move brush coater on track along spinning cylinder. Adjusts brush coater control knob to regulate flow of wet concrete between revolving brushes that impact (spray or throw) coating of concrete onto exterior of rotating cylinder. Stops machine and releases chucks when exterior surface is coated with concrete according to specifications.

- 8155-374 ASBESTOS-CEMENT-INSULATION MOULDER**(asbestos & min. wool; cement, stone & clay) DPT:682
GED: 2 SVP: 3 EC: I 3 4 5 6 PA: M 4

Operates machine to mould insulations from hot asbestos-cement slurry for objects such as pipes and boilers: Installs specified moulds in machine press, using electric hoist and hand tools. Adjusts valves and pumps to control the feed of slurry to mould. Adjusts vacuum hoist, vacuum box, slurry metering controls, mould box and transfer table movement according to specifications for size and shape of insulation being formed. Presses buttons to start and operate automatic machine and monitors forming of insulations. Inspects each insulation to verify that it has been formed according to specifications. Operates vacuum hoist to lift formed insulation to racks on curing cart. Flushes and washes slurry tank, lines, filter cloths and equipment, using hose and hand tools.

- 8155-378 CONCRETE-HYDRAULIC-PRESS OPERATOR**(cement, stone & clay) DPT:682
GED: 2 SVP: 3 EC: I PA: L 4

Operates hydraulic-press-moulding machine to form concrete products such as patio slabs, curbs and silo stays: Reads work order to determine product specifications and production requirements. Selects moulds and ram-press dies according to specifications. Positions and bolts moulds and dies into machine, using hoist and wrenches. Places paper lining in bottom of mould to facilitate removal of product. Aligns mould sections to match downward stroke of ram and die, using hand tools. Turns crank to adjust automatic concrete feeder that pours specified amount of concrete into mould. Reads pressure gauge and adjusts valve to ensure hydraulic ram exerts specified pressure. Monitors automatic feed of concrete into mould. Spreads concrete evenly in mould, using a wooden spatula. Monitors automatic cycling of ram press that squeezes out superfluous water to form product. Monitors automatic cycling of vacuum hoist that lifts product from mould. Measures thickness of product, using gauge and adjusts concrete feed accordingly. May insert reinforcing cage in mould. May clean machine and moulds at end of shift, using hose and brush.

- 8155-382 ASBESTOS-CEMENT-PIPE BENDER**(asbestos & min. wool; cement, stone & clay) DPT:684
bend moulder.
GED: 2 SVP: 3 EC: I PA: M 4

Bends and cuts green asbestos-cement pipe to form elbows of specified radii and lengths: Draws outline of specified radius on wooden block, using template. Cuts along outline to form bending block, using bandsaw. Positions block on bench. Bends pliable green asbestos-cement pipe manually around block to form elbow. Selects ball of specified diameter and manipulates it through bend while manually compressing exterior surface of pipe to restore diameter of pipe. Dampens piping when necessary to facilitate forming, using wet sponge. Cuts bent pipe at lay-out markings to produce elbow of specified length, using power saw. Inserts wooden discs in ends of elbow to protect pipe during curing. Lifts formed elbow onto curing tray. Marks identifying code on elbow, using stencil and brush. May bend and cut clay pipe and be designated accordingly. Clay-Pipe Bender (cement, stone & clay)

- 8155-386 ASBESTOS-CEMENT-PIPE-CORE PULLER**(asbestos & min. wool; cement, stone & clay) DPT:684
GED: 2 SVP: 3 EC: I 4 5 6 PA: H 4

Operates machine to remove cores (forming mandrels) from green asbestos-cement pipes:

Installs machine parts to suit specified mandrels during size changeover, using hand tools. Rolls pipe formed on mandrel into core-pulling machine. Hooks machine to mandrel end. Opens air valve gradually to withdraw mandrel without distorting pipe end. Notifies pipe-machine operator when distortion occurs. Rolls pulled mandrel from machine to table. Rolls green pipe to inspection table. Slings pulled mandrels and operates monorail crane to return mandrels to pipe-machine forming station.

May operate continuous conveyor oven to break the bond and facilitate pulling small-size mandrels from pipes.

- 8155-390 LAUNDRY-TUB MAKER**(cement, stone & clay) DPT:684
GED: 2 SVP: 3 EC: I 5 PA: H 3 4

Casts concrete into moulds to form laundry tubs:

Cleans and oils mould sections to prevent adhesion of concrete, using hand tools and oily rag. Places bottom section of mould, with core(s) attached, on raised assembly-line track, manually. Places prefabricated metal rim around base of core. Fastens outer sections of mould to bottom section of mould, using nuts, bolts and pneumatic wrench. Lowers vibrator over mould manually in co-operation with other worker. Delivers wet concrete to prepared mould, using wheelbarrow or overhead bucket. Shovels or pours concrete into mould. Tamps or vibrates concrete to spread and settle it evenly, using hand tamper or vibrator. Installs metal drain fitting by pushing through concrete against core at specified position, or by placing it in core at specified position before shovelling or pouring concrete into mould. Smooths surface of concrete, using trowel. Collapses mould from around partially cured tub, using pneumatic wrench. Wipes tub with thin slurry cement, sand and water to provide a smooth surface to finished tub.

May tend machine to mix concrete according to formula.

- 8155-394 PRECAST-TERRAZZO MAKER**(cement, stone & clay) DPT:684
GED: 2 SVP: 3 EC: I 5 PA: H 4 7

Casts terrazzo mixture in specified pattern to form precast objects, such as tiles, panels, counter tops and stair sections:

Mixes coloured marble chips, pigment, cement, sand and water according to specifications. Coats surface of mould with oil to prevent adherence of set terrazzo. Clamps mould to vibrating table. Inserts specified pattern template in mould. Pours layer of terrazzo mixture into pattern to form face of object. Removes pattern. Sprinkles dry cement and sand on top of mixture to absorb moisture. Fills remainder of mould with wet cement and sand to form backing for object. Draws straight edge across top of mould to remove excess cement. Turns on electric vibrator to compress casting, remove air bubbles and smooth terrazzo face. Removes mould from vibrating table. Separates set object from mould by collapsing mould.

- 8155-398 SCAGLIOLA CASTER**(cement, stone & clay) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4 7

Casts and finishes scagliola (imitation marble) into objects such as desk sets, penholders and decorative slabs:

Combines material such as marble chips, finely ground gypsum, colouring matter, water and a hard cement powder in a vat according to specifications. Coats mould with oil to prevent casting from adhering to surface. Pours mixture manually into prepared mould and allows to set. Removes object from mould and places on work table. Rubs object manually to smooth surface, using abrasives. Polishes object manually, using felt-covered brick and acetic acid solution.

8155-402 BLOCK-MAKING-MACHINE TENDER(cement, stone & clay) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends automatic machine that casts concrete blocks:

Reads production orders to determine size, aggregate composition and quantity of blocks required. Changes moulds in block-making-machine according to production orders, using hand tools. Manipulates controls to start and stop machine that automatically fills moulds, vibrates them to settle and compact wet concrete, scrapes off excess concrete and strips finished blocks from moulds. Examines concrete blocks emerging from machine for defects, and makes minor adjustments to equipment, using hand tools, or advises concrete mixer of changes required in aggregate composition.

May assist in setting up machine. May tend machine equipped with automatic offbearing mechanism. May verify dimensions of formed concrete blocks, using measuring device.

8155-406 CONCRETE-PIPE-MACHINE TENDER(cement, stone & clay) DPT:685
GED: 2 SVP: 3 EC: I 4 5 PA: M 4

Tends machine that casts and tamps concrete in moulds to form precast products such as drain tile and pipe by one of the following methods:

1. Positions metal mould specified for small pipe sizes on machine platform beneath core and spout, manually. Manipulates lever to lower and position core in mould. Pulls overhead tamping bar into position in mould. Starts machine to rotate mould and activate tamping bar. Turns feed control to release supply concrete from hopper into mould for automatic tamping and casting. Trowels concrete at top of filled mould to level off end of pipe casting. Stops machine for removal of mould to curing area. 2. Secures palletized and prepared (reinforcement in place) large moulds to machine turntable, using pallet rings, bolts and hand tools. Positions and secures packer head on drive shaft, using hand tools. Sets trip lever to adjust feed table height according to height of mould. Starts machine that lowers packer head into mould and conveys concrete to feed table. Rakes concrete from feed table into mould, or observes automatic operation being performed. Monitors operation of machine as packer head ascends and descends automatically while rotating rapidly to tamp and trowel concrete in mould to form pipe. Presses pedal to rotate turntable for automatic removal of filled mould and positioning of empty mould under packer head and feed spout.

8155-410 ASBESTOS-CEMENT-TILE MAKER(asbestos & min. wool; cement, stone & clay) DPT:684
GED: 2 SVP: 2 EC: I 5 PA: L 4

Operates hydraulic press to cut and press asbestosboard to specified size to form asbestos-cement tiles:

Places die cutting tool of specified size on wet asbestosboard sheet and feeds sheet and cutting tool onto bed of press. Starts press to cut sheet into sections. Stops press and removes sections. Selects template of specified size and brushes template with oil to prevent adhesion of asbestosboard. Places wet asbestosboard sections in template and feeds template onto bed of press. Starts press to squeeze superfluous water from sections and form hardened tiles. Stops press and removes template manually. Removes tiles from template and stacks tiles in storage area manually. Cleans template, using scraper and brush.

8155-414 CHALK-EXTRUDING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends automatic extruding machine and cutter that forms billets from clay, chalk and graphite mixtures:

Loads mixture into extrusion chamber and closes chamber door. Presses safety switches, using both hands, to start machine that automatically forces mixture through die onto machine table. Picks off lengths of extruded mixture and places on tray by hand. Places trays under cutter blades and depresses pedal to cut mixture to specified length to form billets for further processing into artist or office supplies. Lifts trays onto storage truck.

May adjust valves and observe gauges to set specified pressure on extrusion ram. May change extrusion dies using hand tools.

8155-418 CHALK MOULDER(misc. prod. fab., n.e.c.) DPT:685
crayon moulder.
GED: 2 SVP: 2 EC: I PA: M 4

Mixes ingredients and tends moulding machine to make crayons or coloured chalk:

Weights chalk, clay, dyes and other materials, according to formula, using scale. Dumps materials into container and mixes ingredients, using portable electric mixer. Pours mixture onto moulding table and smooths it into holes in table top, using hand paddle. Turns wheel to invert moulding table, after mixture has hardened, and starts vibrator to shake chalk or crayon sticks from holes in moulding table onto drying tray.

8155-422 CYLINDER LINER(cement, stone & clay) DPT:685
spin-liner tender.
GED: 2 SVP: 2 EC: B 5 PA: M 4

Tends machine that lines inner surface of steel pipe with concrete in the fabrication of pressure pipe:

Presses button to convey specified amount of wet concrete from hopper or bucket into spoon (trough). Removes excess concrete from spoon, using trowel. Aligns hot air blower with opening of steel cylinder cradled in machine. Starts machine to spin cylinder. Presses button to position spoon inside spinning cylinder. Turns handwheel to tip spoon and spread concrete on inner surface of spinning cylinder. Starts hot air blower to remove moisture from concrete. Adjusts controls to spin cylinder at high speed to compact concrete and squeeze out excess water. Stops machine when inner surface of cylinder is lined with concrete according to specifications.

8156-INSPECTING, TESTING AND GRADING OCCUPATIONS: CLAY, GLASS AND STONE PROCESSING AND FORMING

This unit group includes occupations in inspecting, testing and sampling work, as described under the term titles, 02-170 INSPECTOR (any ind.), 02-430 TESTER (any ind.) and 02-150 GRADER (any ind.), concerned with quality control activities in the processing and forming of clay, glass, stone, abrasives, asbestos and related non-metallic minerals.

8156-110 ABRASIVE-WHEEL TESTER(non-metal. min. prod., n.e.c.) DPT:382
GED: 3 SVP: 6 EC: I PA: M 4 6 7

Inspects and tests abrasive wheels for adherence to specifications, and to determine defects, using any of the following methods:

1. Verifies weight and dimensions of wheels, using instruments such as scales, micrometers and calipers. Compares results with specified tolerances and rejects wheels not conforming to specifications. 2. Tests wheels for density and internal cracking, using sonic tester. Observes gauges to determine density. Compares readings with specified range and rejects wheels falling outside of range. Interprets oscilloscope wave for evidence of internal cracking and rejects cracked wheels. 3. Tests wheels for density, using impact-grading machine. Adjusts machine to thickness of wheel, using hand tools. Starts machine and observes dial to obtain readings of depth of indentations. Compares readings to specified density ratings and rejects wheels falling outside of tolerances. 4. Tests wheels for cracks and soft spots, using machine that spins wheels on enclosed spindle. Regulates number of revolutions per minute, using rheostat. Observes tachometer to ensure wheel meets specified speed requirement and discards wheels that disintegrate. 5. Tests shellac based or resinoid wheels, using hammer. Taps wheel and interprets sound produced to detect internal cracking. Rejects defective wheels. Records number of wheels accepted and rejected.

May perform quality control function on abrasive materials prior to fabrication into abrasive products. May operate hoist or push hand truck to move heavy abrasive wheels to and from test area.

8156-114 PIPE TESTER(asbestos & min. wool; cement, stone & clay) DPT:382
GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Tests and inspects asbestos-cement or concrete pipes for conformance to specifications, using any of the following methods:

1. Examines pipe visually to detect defects such as blisters and indentations. 2. Weighs and measures pipe to determine weight, length, thickness, diameter, circumference, and roundness, using scales, tape, gauges, micrometer and calipers. 3. Operates hydrostatic testing machine to test pipe under pressure. Measures thickness of walls of burst or broken pipe to determine cause of failure, using calipers. 4. Operates flex-testing machines to test strength and hardness of pipe. Stamps approved pipe using stamp and identifies rejected pipe for reworking. Records results of inspections on statistical control charts.

May be designated according to type of material used in pipe production; for example,

Asbestos-Cement-Pipe Tester(asbestos & min. wool)

Concrete-Pipe Tester(cement, stone & clay)

8156-118 BRICK-AND-TILE TESTER(cement, stone & clay) DPT:384
GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Makes brick and tile samples, obtains production samples and tests for conformance to strength specifications:

Tests composition of raw materials such as clay and shale, using laboratory test equipment. Starts machines that grind, sift and mix clay to prescribed consistency. Makes brick and tile samples, using clay mixture, mould, hand rammer and trowel. Places samples in kiln to cure and turns switches and valves to heat kiln to specified temperature. Removes samples from test or production kiln and carries them to test area. Places sample on testing machine supports and turns hand wheel to force bearing plate against samples. Reads gauge to obtain transverse breaking load in pounds per square inch and records readings. Inspects production samples for size, cracks and other imperfections visually and using hammer and notched rule.

8156-120 CONCRETE-PRODUCTS TESTER(cement, stone & clay) DPT:384
GED: 3 SVP: 5 EC: I 5 PA: M 3 4 7

Tests concrete products, using laboratory equipment, for conformance to engineering and municipal standards:

Places concrete pipe in three-edge bearing device or sample cylinder of concrete in hydraulic press to test pressure necessary to fracture pipe or crush cylinder. Plugs pipe ends, using special end covers, gaskets and clamps, and attaches water hose to fill pipe and bring internal pressure to specified level. Measures and records leakage of pipe indicated by loss of pressure on gauge, after specified interval. Weighs pipe or sample cylinder, before and after being filled with or immersed in water for specified time, to determine amount of water absorption. Measures dimensions and angles of products, using gauges and verniers, for conformance to specifications. Filters sample of aggregate through series of screens, at specified intervals, to separate materials. Weighs materials on scale to determine specific gravity of concrete. Records test results.

May measure metal pallets used to form mouth of pipe, using verniers. May measure amount of slump of wet concrete during specified period. May be designated according to type of product tested; for example,

Concrete-Pipe Tester

8156-122 ASBESTOS-FIBRES TESTER(asbestos & min. wool) DPT:384
GED: 3 SVP: 5 EC: I 5 7 PA: L 4 7

Tests samples of asbestos fibre to determine quality and grade by performing any combination of the following duties:

Collects and weighs samples of asbestos fibre, using scale. Dumps weighed samples on vibrating screens to grade fibres by length. Manipulates valves to control compressed air and force asbestos fibre through vibrating screen to separate fibre from dust and other granulated material. Weighs graded fibres and records proportions obtained of each grade. Tends fluffer, fiberizer, willow or other machine to process and identify fibres. Weighs fibre and calculates proportions of fibre, dust and other impurities. Measures samples of

asbestos fibre, using micrometer, to determine average length distribution. Examines fibres for cleanliness. Records test results and compiles reports.

May test raw asbestos fibre to determine moisture content.

8156-126 FIBREGLASS TESTER(syn. fibres) DPT:384
GED: 3 SVP: 5 EC: I PA: M 4 7

Tests fibreglass yarn and products to ensure conformance to specifications by performing any combination of the following duties:

Weighs samples of fibreglass before and after drying, using scale to determine quantities of moisture, solids and binder in sample. Operates tensile testing machine to determine breaking strength of fibreglass yarn. Operates twist counter to determine number of twists per unit length of decorative yarn. Measures length and diameter of fibreglass sample to verify conformance to specifications, using rule and micrometer. Inspects fibreglass yarn for defects, such as dirt and grease spots and frayed ends. Examines fibreglass products for defects in manufacture. Compares test results with specifications and rejects samples that fail to conform to standards. Records test results on quality control charts and compiles reports.

May examine test samples after customer trials and provide required technical assistance.

8156-130 CONCRETE-PRODUCTS INSPECTOR(cement, stone & clay) DPT:387
GED: 3 SVP: 5 EC: I PA: L 4 7

Inspects finished concrete products or parts for conformance to specifications:

Measures concrete products such as prestressed concrete building panels, conduit and beams, using micrometer, calipers, fixed gauges and rule. Examines products for defects such as cracks, warped sections, bent reinforcing rods and surface or colour variations. Rejects or re-grades products not meeting specifications and notifies supervisor of defects, for repairs or corrective action in future production. Records quantity and quality of products produced and stamps products with inspection date and grade, using rubber stamp. Ensures that samples of conduit from each batch are forwarded for water-pressure and compression tests by other workers.

May make minor repairs to conduit, using brush and cement.

8156-134 POTTERY-AND-PORCELAIN-WARE INSPECTOR(cement, stone & clay) DPT:387
GED: 3 SVP: 5 EC: I PA: M 4 7

Inspects pottery or porcelain ware at various stages of production for conformance to manufacturer's standards of size, finish and appearance:

Reads work order to determine product specifications. Examines completely formed, dried, fired, glazed and decorated ware for defective materials, workmanship and appearance. Measures dimensions of product, using templates, calipers, scale and steel tape. Examines glaze for uniformity of surface and compares colour with specified colour chips. Evaluates condition of ware and orders reworking or rejects pieces not conforming to specifications. Compiles data and prepares reports on type and frequency of defects found for quality control and production engineering purposes.

8156-138 LAMINATED-ASBESTOS-PRODUCTS INSPECTOR(asbestos & min. wool) DPT:584
GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Inspects asbestos insulation board and acoustic tile after each stage of processing:

Selects and identifies samples of insulation board and acoustic tile from each processing unit. Weighs samples of wet and dry boards to calculate moisture content. Tests shear and compression strength and strength of adhesive of boards and tiles, using tensile tester. Examines boards and tiles for defects, such as dirt spots, scratches, broken or chamfered edges, cracks, and cleanness of cut. Verifies size of boards and tiles, according to specifications, using tape and micrometer. Identifies and records type and number of defects of rejected products. Selects and marks samples of boards and tiles for laboratory testing.

8156-142 GLASS-CONTAINERS TESTER(glass) DPT:384
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Tests glass containers for conformance to specifications:
Fills container with measured amount of water to determine fluid capacity. Verifies size and thickness of container, using instruments such as calipers, micrometers and gauges. Operates polariscope to ensure container meets annealing standards. Immerses container alternately in baths of hot and cold water to determine thermal shock resistance. Fills container with water and inserts electrically controlled plunger to determine bursting strength of container. Cuts cross section from container, using abrasive wheel. Examines cross section under microscope for defects such as cracks, bubbles and thinness of walls. Records and compares test data with specifications. Notifies foreman of variations from standards.
May be designated according to type of container tested; for example, Beaker Tester
Bottle Tester

8156-146 QUALITY-CONTROL INSPECTOR, GLASS(glass) DPT:384
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Inspects glass products for conformance to specifications, performing any combination of the following duties:
Selects samples of glass products, such as automobile windshields, flat glass, glassware and other glass items from production line or shipping case. Examines product for defects, such as cracks, scratches, chips, reams (wavy distortions) and blemishes. Measures dimensions of product, using micrometer, calipers, gauges, rule and templates. Operates distortion-analyzing machine and interprets gauge and graphic readings to determine degree of ream in flat glass. Operates gauge to determine eccentricity of glass containers. Examines glass for annealing defects, using polariscope. Records and identifies rejected products for repair or scrap.
May inspect shipping cases for defective packaging.

8156-150 ABRASIVE-SHEETS INSPECTOR(non-metal. min. prod., n.e.c.) DPT:484
GED: 2 SVP: 3 EC: 1 7 PA: L 4 7

Inspects samples of abrasive sheets to ensure amounts of adhesive, abrasive and sizing conform to specifications:
Passes sample of base material through glue-applying unit of machine. Weighs sample, using scale, and calculates proportion of glue being applied. Passes sample of glue-coated material through abrasive-applying unit of machine. Weighs sample and calculates proportion of abrasive being applied. Passes sample through sizing-applying unit of machine. Weighs sample and calculates proportion of sizing being applied. Stops and adjusts machine if proportions of additives vary from specifications.
May operate sanding machine to verify cutting ability of abrasive sheets. May be designated according to type of abrasive sheet inspected; for example, Emery-Cloth Inspector
Sandpaper Inspector

8156-154 ASBESTOS-SHINGLE INSPECTOR(asbestos & min. wool) DPT:584
GED: 2 SVP: 3 EC: 1 5 7 PA: L 4 7

Inspects asbestos shingles for defects and adherence to specifications:
Observes shingles moving on conveyor to detect defects, such as cracks, broken edges and irregularly punched holes. Rejects shingles that fail to meet specifications. Removes sample shingles from conveyor and verifies size, using templates. Measures and weighs sample shingles, using gauges, calipers, micrometer and scales to determine grade. Sorts and marks sample shingles according to grade and sends to laboratory for testing. Records number of defective shingles and type of defect.

8156-158 PLASTERBOARD INSPECTOR(cement, stone & clay) DPT:664
GED: 2 SVP: 3 EC: 1 5 7 PA: L 4 7

Inspects plasterboard for defects and conformance to specifications:
Examines sides and edges of plasterboard to detect defects, such as scratches, dents and defective materials. Verifies length, width and thickness, using rule and micrometer. Selects and weighs sample of

plasterboard, using scale. Verifies hardness of sample, using knife or probe. Measures unabsorbed moisture in sample, using moisture-sensitive meter. Records quantity of plasterboard produced, and notifies foreman of type of defects.

8156-162 INSULATOR TESTER(electric. equip.) DPT:684
GED: 2 SVP: 2 EC: 1 6 PA: M 4 7

Conducts tensile or dielectric tests on porcelain insulators by either of the following methods:
1. Places insulator in tensile tester. Starts machine that clamps bottom of insulator and exerts force at each end to test tensile strength. Observes insulator to detect cracks and reads dial to record force at time of cracking. Removes insulator from testing machine and places insulator on conveyor for further testing. 2. Connects ends of insulator to testing set. Turns dial on set to specified voltage and current. Presses button to release current and create arc. Observes meters on test set to verify dielectric strength of insulator. Inspects insulator for evidence of burning in glaze or porcelain. Rejects defective insulators.
May regulate air gap and evaluate condition of insulators on conveyor-type testing equipment. May be designated according to type of test performed; for example, Insulator Tester, Electrical
Insulator Tester, Mechanical

8156-166 FIBREGLASS INSPECTOR(syn. fibres) DPT:685
GED: 2 SVP: 2 EC: 1 5 7 PA: M 4 7

Inspects fibreglass products for defects such as grease and dirt spots, by performing any of the following duties:
Examines fibreglass mat for defects, and cuts out defective sections, using knife or automatic cutting machine. Removes tubes of fibreglass sliver from overhead conveyor. Examines tubes and unravels defective portions onto waste tube, using air-suction device. Breaks or cuts excess sliver from tube. Weighs tubes of sliver to ensure specified weight attained and stacks tubes on truck. Replaces underweight tubes on overhead conveyor.
May resplice cut mats, using pressure roller.

8156-170 ABRASIVE-AND-CLAY-PRODUCTS GRADER(cement, stone & clay) DPT:687
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Grades abrasive and clay products according to size, shape, colour and quality by performing any combination of the following duties:
Examines products such as abrasive wheels, bricks, tiles and sewer pipes for cracks, chipped edges, warping or other defects. Sorts products according to quality and rejects products not conforming to specifications. Reads specifications of abrasive products and grades products according to size and shape. Compares tiles against colour shades on sample board and grades tile according to colour. Records quantities of products passed or rejected.
May stack bricks in specified pattern for banding. May pack products for shipping. May be designated according to product graded; for example, Brick Grader
Pipe Grader
Tile Grader

8156-199 OTHER INSPECTING, TESTING AND GRADING OCCUPATIONS, CLAY, GLASS AND STONE PROCESSING AND FORMING

This group includes clay, glass and stone processing and forming inspectors, testers and graders, not elsewhere classified; for example, those who test effectiveness of vacuum bottles. A typical example of an occupational title covered by this residual group definition is:
Vacuum-Bottle Tester(glass)

8158-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: CLAY, GLASS AND STONE PROCESSING AND FORMING

This unit group includes occupations in labouring or

other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with preparing clay, glass, stone, abrasives, asbestos and related non-metallic minerals for use in semi-finished or finished state.

8158-110 ASBESTOSBOARD SHEARER(asbestos & min. wool) DPT:686
GED: 1 SVP: 2 EC: I 5 7 PA: H 4

Feeds asbestosboard into shearing machine to cut board into articles, such as shingles and acoustic tile:

Adjusts guides of power-shearing machine according to specifications, using hand tools. Feeds asbestosboards against guides into shearing machine to cut boards to specified size.

May verify dimensions of cut-product samples, using rule.

8158-114 CLAY PRESSMAN(cement, stone & clay) DPT:686
GED: 1 SVP: 2 EC: I 4 PA: VH 4

Feeds clay slip into vacuum press and removes clay cakes from press, in conjunction with co-worker:

Positions frames and filters in press, using clamps, and locks front-end frame, using wrench. Starts slip pump to charge press with clay slip. Starts vacuum pump to remove air from clay. Stops slip pump and vacuum pump and unlocks front-end frame. Unclamps each frame and manually removes clay cakes from frames. Delivers clay cakes to departments for further processing, using hand cart.

8158-118 GLASSWARE FINISHER(glass) DPT:686
GED: 1 SVP: 2 EC: I 5 7 PA: L 4

Heats glassware to remove defects, such as air bubbles, chips and rough surfaces:

Places glassware on rotating disk to bring glassware in contact with gas flame that melts or fuses glass to remove defects. Turns valve to regulate intensity and colour of flame and maintain specified temperature. Removes glassware from disk, using tongs.

8158-122 MIXER HELPER(cement, stone & clay) DPT:686
GED: 1 SVP: 2 EC: I 5 PA: H 4

Loads and unloads mixing machines used in the processing of materials, such as clay, slate and silica by performing any combination of the following duties:

Obtains materials from storage area, using hand truck. Receives instructions or signals from mixing-machine tender and dumps materials onto conveyor or into mixing-machine hopper. Unloads mixture from machine into storage bins, using shovel, or pulls levers to regulate flow of mixture onto conveyor. Cleans machine and work area.

May transport mixed materials to machines for further processing, using hand truck.

8158-126 ASBESTOS MOULDER(asbestos & min. wool) DPT:687
GED: 1 SVP: 2 EC: I PA: M 4

Moulds asbestos into insulation sleeves:

Covers base section of wooden form with wet asbestos sheets or fibres. Smooths asbestos by hand and clamps top section of form over asbestos. Places forms on rack for drying.

8158-130 BALCONY MAN(glass) DPT:687
GED: 1 SVP: 2 EC: I 3 PA: L 4 7

Performs any combination of the following duties in the manufacture of continuous sheets of glass:

Inspects sheet of glass visually for scratches and breaks. Wipes foreign material from rolls of drawing kiln. Adjusts roll weights and opens rolls, following directions of kiln operator. Adjusts air ducts as directed to cool glass, minimize warpage and stop breaks from running. Dumps broken glass into waste bin.

8158-134 BISQUE CLEANER(cement, stone & clay) DPT:687
GED: 1 SVP: 2 EC: I PA: L 4

Cleans and finishes bisque ware (unglazed pottery or porcelain) by hand:

Examines ware for defects. Grinds and smooths rough surfaces, using abrasive stones and sandpaper. Cleans ware, using brush and airhose.

8158-138 CONCRETE-BLOCK MAKER(cement, stone & clay) DPT:687
GED: 1 SVP: 2 EC: O 5 PA: H 4

Performs any combination of the following duties in the manufacture of prestressed concrete blocks:

Cleans forms, using hammer, scraper and wire brush. Brushes oil or wax on forms to prevent adhesion of concrete. Assembles forms to specified dimensions, using spacer bars and hand tools. Places reinforcing steel cage in form by hand or using winch. Installs stressing cables in form, using clamps. Clamps vibrators to sides of form, using hand tools, and starts vibrators as concrete is poured into forms. Levels concrete at top of form, using hand vibrator, and fills low spots with concrete, using shovel. Removes forms from concrete blocks after drying, using hand tools. Cuts protruding end of stressing cable, using saw.

8158-142 CYLINDER-FORM ASSEMBLER(cement, stone & clay) DPT:687
can assembler.
GED: 1 SVP: 2 EC: B 5 PA: VH 3 4

Bolts round-up ring sections around steel can (cylinder) to retain circular shape of cylinder during casting of reinforced concrete pressure pipe:

Rolls can on raised track into assembly-line position, assisted by other workers. Measures and marks length of can to position rings, using gauge and chalk. Positions and tightens seam bolts, mould-ring flange over can end, or ring halves against can, using sledge hammer and pneumatic or manual wrench. Rolls completed can on track to concrete lining area.

May take cans apart after casting, using crowbar, hammer and wrench and be designated accordingly,
Mould Stripper

8158-146 GLASS-CUT-OFF MAN(glass) DPT:687
GED: 1 SVP: 2 EC: I PA: H 4

Cuts sheets of glass to specified length and trims sharp edges:

Moves cutter manually across sheet of glass to score line at specified length. Breaks glass along line and throws waste glass into bin. Trims sharp edges, using glass cutter. Stacks sheets of glass on rack.

May round corners of window panes, using carborundum wheel, to facilitate sliding of pane into frame.

8158-150 KILN-DOOR BUILDER(cement, stone & clay) DPT:687
kiln-wicket builder.
GED: 1 SVP: 2 EC: O 3 6 7 PA: M 2 3 4

Builds and pulls down wickets (kiln doors) and seals crown openings in kilns, using hand tools.

Stacks brick in doorway of kiln. Mixes clay dust and water to form plaster and spreads plaster over bricks to seal opening, using trowel. Climbs on top of kiln and places covers on crown openings over kiln and seals them with plaster. Pulls down wickets or doors with hook after firing of kiln and removes crown covers to control cooling of product.

May assist in placing fans and draught boxes for cooling kilns after firing.

8158-154 KILN LABOURER(cement, stone & clay) DPT:687
kiln drawer.
GED: 1 SVP: 2 EC: I 3 7 PA: H 4

Performs any combination of the following duties during manufacture of clay products:

Stacks products in specified pattern on kiln car or hand truck. Pushes kiln car or hand truck to or from kiln, drier, and shipping or storage

area. Removes kiln furniture, such as tie bricks, clamps and holders, and places in box for reuse. Replaces broken brick in kiln or kiln car. Cleans kilns and work area, using shovel and broom. Examines products for elementary defects.

May be designated according to task performed; for example,

Hacker

Kiln-Car Loader

8158-158 SPRUE BREAKER(glass) DPT:687
crack-off man.
GED: 1 SVP: 2 EC: 1 PA: L 4

Scores and breaks excess glass from moulded and cast articles to impart finish:

Places glass articles on rollers and rotates rollers over cutting flame to score line on neck of article. Breaks waste glass at score mark, using jig. Examines cleanness of break.

May separate glass castings, using steel mallet.

8158-162 ASBESTOS-MOULD STRIPPER(asbestos & min. wool) DPT:687
GED: 1 SVP: 1 EC: 1 4 PA: H 4

Removes asbestos insulation sleeves from moulds:

Inverts mould on work bench to remove insulation sleeve. Examines sleeves and rejects cracked or otherwise broken ones. Cleans wet fibre from mould, using scraper. Stacks sleeves and clean moulds on hand trucks.

8158-166 ASBESTOS-SHINGLE FLOOR HAND(asbestos & min. wool) DPT:687
GED: 1 SVP: 1 EC: 1 5 7 PA: VH 4

Performs any combination of the following duties in production of asbestos shingles:

Cleans dirt and foreign material from asbestos shingles, using wire scratchboard. Stacks shingles in bundles and places bundles on pallet. Identifies each pallet load with tag to denote type and grade of shingles. Cleans work area, using shovel and broom.

8158-170 WARE CLEANER(cement, stone & clay) DPT:887
GED: 1 SVP: 1 EC: 1 PA: L 4

Smooths surface of cast, pressed, glaze-dipped or fired-clay products by performing any of the following duties:

Trims soft flash or picks loose clay from cast or pressed clay products, using knife and sponge. Wipes fingers over glaze to distribute glaze evenly over product prior to firing. Smooths hardened surface after firing, using sandpaper or emery paper, and brushes dust from surface.

8158-199 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, CLAY, GLASS AND STONE

This group includes clay, glass and stone processing and forming labourers and elemental workers, not elsewhere classified; for example, those who load and unload drying tunnels with clay and abrasive products, remove moisture-laden air from automobile windshields, remove greenware from moulds prior to firing, feed conveyors with glass vials to facilitate manufacture of levels, control hoppers to discharge materials for concrete, transport moulds and other equipment to and from glass forming machines, and perform other labouring and elemental work in processing and forming clay, glass and stone. Typical examples of occupational titles covered by this residual group definition are:

Batch-Concrete Labourer(cement, stone & clay)

Drying-Tunnel Man(cement, stone & clay)

Floor Hand, Glass(glass)

Glass-Vial-Conveyor Feeder(glass)

Mould Remover, Greenware(cement, stone & clay)

Vacuum-Bag Man(glass)

8159-CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with processing, forming and finishing clay, glass, stone, abrasives, asbestos and related non-metallic minerals.

8159-110 ABRASIVE-COATING-MACHINE OPERATOR(non-metal. min. prod., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 PA: M 4

Sets up and operates machine to apply abrasive granules on base materials, such as fabrics, fibre or paper, by performing any combination of the following duties:

Reads work order and positions guides and stops on machine bed according to size of base material, using rule or template. Turns screws to adjust valves and regulate thickness of abrasive coating applied to base material. Sets type in printing rolls to identify brand name and product identification on outside face of base material. Mounts roll of base material on machine spindle and positions material against guides. Starts machine and manually feeds edge of material into machine. Examines abrasive coated material for conformance to specifications.

8159-112 DECORATING-MACHINE TENDER(glass; plastic prod.) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: S 4 7

Tends semi-automatic machine that prints single or multicolored pictures, designs or labels on cylindrical glass or plastic containers by means of silk screen plate:

Pours premixed paint or places pieces of ceramic paint into reservoir. Installs silk screen plate in frame of printing device, using hand tools. Turns valve to regulate temperature and flow of paint onto silk screen plate. Smooths paint onto silk screen, using flat bladed knife or piece of cardboard. Places glass containers between indexing rollers. Depresses pedal to close roller guides, and to raise roller fixture against silk screen plate. Starts machine to print picture or design on container. Stops machine and releases pedal to lower roller fixture from silk screen and open roller guides. Removes printed containers and places them on tray or moving conveyor. Inspects printed containers to detect paint chips, printing misalignment and smears, and verifies position of label or design, using rule or gauge.

May tend automatic machine that feeds containers from conveyor into machine, rotates them under stainless steel stencil, and ejects printed containers onto moving conveyor. May spray containers with silicone to protect coating.

8159-114 PLASTERBOARD CUTTER(cement, stone & clay) DPT:685

knifeman, plasterboard.

GED: 2 SVP: 3 EC: 1 PA: L 4

Tends equipment that cuts, perforates and stencils continuous sheet of plasterboard:

Adjusts cutting knife and perforator according to specifications, using gauge and hand tools. Inserts letters in stenciling drum, using tweezers. Fills drum with ink. Adjusts speed of roller and conveyor according to specified dimensions of plasterboard. Selects sample of plasterboard and weighs and measures sample, using scale, rule and micrometer to ensure conformance to specifications.

8159-116 FETTLER(cement, stone & clay) DPT:664
ceramic-tile fletcher.

GED: 2 SVP: 2 EC: 1 7 PA: L 4

Removes, trims and stacks ceramic products, such as wall and floor tile and insulators, discharged from press:

Grinds, trims and scrapes tile to remove defects, such as cracks, mould flash and chips, using grinder, scraping tool, wire brush or sandpaper. Examines tile or insulators for cracks or imperfections and calls out to press tender to stop machine for cleaning of die cavity when irregularities occur. Measures dimensions of tile for conformance to specifications, using gauge. Stacks tile in specified pattern on trays or pallets. Places trays or pallets on conveyor, manually, and presses switch to start conveyor that transfers products to glazing center.

8159-118 MAT PACKER(asbestos & min. wool) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Tends machine that rolls mats of fibreglass and packs rolled mats for shipment:

Guides end of mat around tube mounted on mandrel of rolling machine. Starts machine to roll mat and examines mat to detect flaws such as offsize sections, or grease and binder spots. Stops machine and pushes button to lower knife and cut flaws from mat. Lifts roll of mat from machine and packs roll in container. Identifies contents of container, using labels or stencils.

May resplice cut mat, using pressure rollers.

8159-120 ASBESTOSBOARD SANDER(asbestos & min. wool) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Tends machine that sands and smooths asbestosboards:

Turns handwheel to adjust sander according to specifications for thickness of board. Places board on feed bed of sander and guides board through pressure rollers to automatic sanding mechanism. Depresses pedal to release rollers and removes board. Verifies thickness of board, using gauge.

8159-122 FIBREGLASS GRINDER(asbestos & min. wool) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Grinds offsize fibreglass pipe coverings to uniform diameter and saws pipe to specified size:

Selects mandrel of appropriate diameter for pipe, and pushes covering on mandrel. Installs mandrel in grinder, and operates grinder to reduce covering to uniform diameter. Verifies diameter, using gauge. Transports coverings to saw line, and operates saw to cut covering to correct size and to cut lengthways in two sections.

8159-126 ASBESTOS-FIBRE PREPARER(asbestos & min. wool) DPT:686
preparation-room worker.
GED: 2 SVP: 2 EC: I 5 7 PA: H 4

Prepares asbestos and other fibres for use in the manufacture of asbestos products, by performing any combination of the following duties:

Collects batches of asbestos, cotton and synthetic fibres from storage area, using hand truck. Assembles fibres into lots prior to blending, following instructions. Feeds fibres into blending machine hopper or onto conveyor, manually or using pitch-fork and shovel. Pulls levers to open or close gates of blower pipes, and direct fibre from blending machine onto hand truck or into mixing machine for further processing. Transports blended fibres to storage bins, using hand truck. Fastens bags under storage bins, pulls lever to open discharge gates and fill bags with fibre. Weighs and rolls bags of fibre to ensure uniform weight and size, using scale and rolling machine.

8159-130 PLASTERBOARD PAPER MAN(cement, stone & clay) DPT:686
paper hanger, plasterboard.
GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Loads plasterboard machine with rolls of paper:

Inserts shaft through roll of paper, places plates and collars over ends of shaft and secures collars, using wrench. Mounts and aligns rolls of paper in machine rack, using hoist. Threads paper through guides. Starts and monitors machine for alignment of paper, and paper defects, such as rough surface, mill splices and soiled areas. Stops machine to cut defective paper from roll, or to insert new roll, and splices ends of paper, using glue and brush. Records identifying number, weight and amount of paper wasted for each roll.

8159-134 CASTINGS FINISHER(cement, stone & clay) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4

Finishes surface of plaster castings, such as statues, figurines and architectural ornaments:

Applies plaster to chips, cavities and other defects to finish castings, using spatula. Removes excess plaster, using scraping tool. Smooths surface of castings, using wet sponge, steel wool or sandpaper.

8159-138 PORCELAIN GLAZER(cement, stone & clay) DPT:687
dipper.
GED: 2 SVP: 2 EC: I PA: L 4

Dips porcelain ware in glaze solution preparatory to firing:

Grasps porcelain ware with fingers and dips ware in tub of liquid glaze. Removes ware from glaze and twists ware to spread glaze evenly over surface and throw off excess glaze. Sets ware on drying rack and brushes glaze over unglazed spots left by fingers.

May remove excess glaze from dry ware, using sponge or buffing wheel. May operate spray gun to glaze large pieces of porcelain ware.

8159-199 OTHER CLAY, GLASS AND STONE PROCESSING, FORMING AND RELATED OCCUPATIONS

This group includes clay, glass and stone processing, forming and related workers, not elsewhere classified; for example, those who laminate glass and vinyl sheets or temper sheets of glass to produce safety glass, assemble special abrasive wheels and other abrasive products, produce bulk experimental abrasive materials, tend drying room to dry large rolls of abrasive material, control combination drying oven and spray booth that preheats and glazes pottery ware, and those who otherwise process or form clay, glass and stone materials. Typical examples of occupational titles covered by this residual group definition are:

Abrasives Drier(non-metal. min. prod., n.e.c.)
Abrasive-Specialty Assembler(non-metal. min. prod., n.e.c.)
Bullet-Proof-Glass Assembler(glass)
Experimental-Abrasives Maker(non-metal. min. prod., n.e.c.)
Glass Laminator(glass)
Glass Temperer(glass)
Glaze Sprayer(cement, stone & clay)

816/817-CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS

This minor group includes occupations concerned with refining, processing or preparing chemicals, petroleum, coal, rubber, plastic and related materials for subsequent use by means, such as mixing, separating, distilling, subliming, carbonizing, heat treating, crushing, calendering and coating. These occupations are classified in the following unit groups:

8160 Foremen: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations

- 8161** Mixing and Blending Occupations,
Chemicals and Related Materials
- 8163** Filtering, Straining and Separating
Occupations, Chemicals and Related
Materials
- 8165** Distilling, Subliming and Carbonizing
Occupations, Chemicals and Related
Materials
- 8167** Roasting, Cooking and Drying
Occupations, Chemicals and Related
Materials
- 8171** Crushing and Grinding Occupations,
Chemicals and Related Materials
- 8173** Coating and Calendering Occupations,
Chemicals and Related Materials
- 8176** Inspecting, Testing and Sampling
Occupations: Chemicals, Petroleum,
Rubber, Plastic and Related Materials
Processing
- 8178** Occupations in Labouring and Other
Elemental Work: Chemicals, Petroleum,
Rubber, Plastic and Related Materials
Processing
- 8179** Chemicals, Petroleum, Rubber, Plastic and
Related Materials Processing
Occupations, n.e.c.

**8160-FOREMEN: CHEMICALS, PETROLEUM,
RUBBER, PLASTICS AND RELATED MATERIALS
PROCESSING OCCUPATIONS**

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and coordinating activities of workers engaged in refining, processing and preparing petroleum, coal, chemicals, rubber, plastics, and related materials for subsequent use.

**8160-110 FOREMAN, COATING AND CALENDERING
OCCUPATIONS, CHEMICALS AND RELATED
MATERIALS(any ind.) DPT:138**

Supervises and co-ordinates activities of workers engaged in operating, tending or feeding, machines or equipment, that calender, coat, dip, saturate, impregnate or laminate materials; such as, chemicals, rubber, plastics, paper or related materials to impart a desired finish or uniform thickness, (Unit Group 8173):

Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).

May supervise workers engaged in coating or calendering specific materials for a variety of purposes and be designated accordingly; for example,

Foreman, Artificial-Leather Coating(plastic prod.)
Foreman, Calendering(plastic prod.)
Foreman, Coating(paper prod.)
Foreman, Gasket Coating(asbestos & min. wool)
Foreman, Latex-Carpetbacking Department(textile)

Foreman, Linoleum(linoleum prod.)
Foreman, Plastic-Film Coating(chem., n.e.c.)
Foreman, Roofing Materials(asphalt roof.)

**8160-114 FOREMAN, CRUSHING AND GRINDING
OCCUPATIONS, CHEMICALS AND RELATED
MATERIALS(any ind.) DPT:138**

Supervises and co-ordinates activities of workers engaged in operating and tending machines that crush, grind, pulverize, dice, cut, shred, chip, mill, flake and pelletize to reduce or enlarge size of materials; such as, chemicals, petrochemicals, coal, rubber, plastics and related materials, (Unit Group 8171):

Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN(any ind.).

May supervise workers engaged in crushing and grinding particular ingredients and be designated accordingly; for example,

Foreman, Coal and Coke Crushing and Grinding(petrol. & coal prod.)
Foreman, Grinding and Packaging(chem., n.e.c.)

**8160-118 FOREMAN, DISTILLING, SUBLIMING AND
CARBONIZING OCCUPATIONS, CHEMICALS
AND RELATED MATERIALS(any ind.) DPT:138**

Supervises and co-ordinates activities of workers engaged in operating and tending equipment that heats chemicals and related materials to vapourize and separate volatile substances; cools, condenses and precipitates refined substances; liquefies and distills natural and industrial gases; and removes or obtains gases, condensates or residues in stills, ovens or retorts, (Unit Group 8165):

Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Alum Plant(chem., n.e.c.)
Foreman, By-products(chem., n.e.c.; petrol. & coal prod.)
Foreman, Caustic Plant(chem., n.e.c.)
Foreman, Cell Room(chem., n.e.c.)
Foreman, Chlorine Plant(chem., n.e.c.)
Foreman, Distillation(chem., n.e.c.; petrol. & coal prod.)
Foreman, Evaporator(chem., n.e.c.)
Foreman, Fuel-Gas(petrol. & coal prod.)
Foreman, Glycerine Refinery(soap)
Foreman, Liquefaction(chem., n.e.c.)
Foreman, Natural Gas Plant(oil & nat. gas)
Foreman, Ovens(chem., n.e.c.)
Foreman, Refinery Unit(petrol. & coal prod.)
Foreman, Soda Ash(chem., n.e.c.)
Foreman, Vacuum Pans(chem., n.e.c.)

8160-122 FOREMAN, FILTERING, STRAINING AND SEPARATING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in operating and tending equipment that treats chemicals, petroleum products, coal derivatives, rubber, plastics and related materials by means; such as, agitating, centrifuging, filtering, screening, settling, straining, sifting and squeezing, (Unit Group 8163):
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Bitumen-Extraction Plant(petrol. & coal prod.)
Foreman, Brine(chem., n.e.c.)
Foreman, Clarification(chem., n.e.c.)
Foreman, Coke Screening(iron & steel; petrol. & coal prod.)
Foreman, Dehydration(explosives)
Foreman, Filtration(non-ferrous metal; paint & varn.)
Foreman, Purification Plant(petrol. & coal prod.)
Foreman, Viscose Filtration(chem., n.e.c.)

8160-126 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING(any ind.) DPT:138

chief inspector; foreman, inspection; foreman, quality control.

Supervises and co-ordinates activities of workers engaged in quality control functions; such as, inspecting, testing, grading and sampling in processing of chemicals, petroleum products, rubber, plastic, and related materials, (Unit Group 8176):
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers concerned in a particular quality control activity and be designated accordingly; for example,
Foreman, Carbon and Graphite Inspectors(non-metal. min. prod., n.e.c.)
Foreman, Petroleum-Products Inspectors(petrol. & coal prod.)
Foreman, Plastics Inspectors(chem., n.e.c.)
Foreman, Rubber Inspectors(rubber)
Foreman, Samplers(chem., n.e.c.; petrol. & coal prod.)

8160-130 FOREMAN, LABOURING AND OTHER ELEMENTAL WORK: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in labouring or other elemental work related to refining, preparing and processing petroleum, chemicals, plastics, and related materials for subsequent use, (Unit Group 8178):
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in labouring or other elemental work

related to a particular activity or area of plant and be designated accordingly.

8160-134 FOREMAN, MIXING AND BLENDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in weighing, mixing, blending, compounding, matching, combining and mingling materials; such as, chemicals, petroleum, coal, rubber, plastics, and related materials, by hand or specialized machines, to produce a single wet or dry mass or compound or to achieve quality, texture, colour or similar characteristics, (Unit Group 8161):
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in mixing and blending particular ingredients in a variety of industries and be designated accordingly; for example,
Foreman, Battery Paste(chem., n.e.c.)
Foreman, Cleaning Compounds(chem., n.e.c.)
Foreman, Compounding(plastic prod.; rubber)
Foreman, Explosives Mixing(explosives)
Foreman, Fertilizers(chem., n.e.c.)
Foreman, Grease Plant(petrol. & coal prod.)
Foreman, Ink Preparation(chem., n.e.c.)
Foreman, Pharmaceutical Compounding(pharm. & toil.)
Foreman, Reagents(chem., n.e.c.)
Foreman, Viscose(chem., n.e.c.)

8160-138 FOREMAN, ROASTING, COOKING AND DRYING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in operating and tending equipment that subjects chemicals and related materials to heat, air, vacuum or desiccants to melt, dry, char, purify, concentrate, liquefy or change chemical composition, (Unit Group 8167):
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Carbon Processing(petrol. & coal prod.)
Foreman, Charcoal Briquettes(petrol. & coal prod.)
Foreman, Coke Ovens(petrol. & coal prod.)
Foreman, Cooking Chemical-Recovery(chem., n.e.c.)
Foreman, Driers(chem., n.e.c.; petrol. & coal prod.)
Foreman, Phosphorus Processing(chem., n.e.c.)
Foreman, Reactor Unit(chem., n.e.c.)
Foreman, Varnish(paint & varn.)

8160-142 FOREMAN, PILOT PLANT(chem., n.e.c.) DPT:138

GED: 4 SVP: 8 EC: I 6 PA: L 4 5 7

Supervises and co-ordinates activities of workers engaged in operating small-scale chemical production equipment, under experimental conditions, to test methods and chemical processes for product development:
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.). Sets up and modifies equipment, according to specifications, to produce experimental products. Directs operators in mixing of new formulas and safe handling of new ingredients. Maintains close liaison with development laboratory personnel and production departments. Identifies waste by-product materials involved in new product development and co-ordinates with waste control engineer for proper disposal procedures.
May assist development chemist in analyzing test results and recommend corrective action to be taken.

8160-146 FOREMAN, PUMPING AND BLENDING(petrol. & coal prod.) DPT:132

controller, oil movement.
GED: 4 SVP: 8 EC: I PA: S 4 5 6 7

Supervises and co-ordinates activities of workers engaged in pumping petroleum products, operates computerized control panel to move crude, intermediate, and refined products throughout refinery, and to blend gasolines according to specifications:

Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.). Directs workers to operate equipment beyond range of control panel or to activate controls in event of control panel malfunction. Controls movement and storage of crude, intermediate and refined petroleum products throughout refinery, by operating computerized control panel. Blends gasolines according to specifications by selecting appropriate control switches. Records gauge levels of all tanks by operating computerized controls or by collating information submitted by other workers. Prepares shift log showing quantities of incoming crude, refinery streams to processing units, and products placed in storage.
May co-ordinate activities of workers engaged in shipment of refinery products by truck, rail or water.

8160-199 MISCELLANEOUS FOREMEN, CHEMICALS, PETROLEUM, RUBBER AND PLASTICS PROCESSING OCCUPATIONS

This group includes processing foremen, not elsewhere classified; for example, those who supervise and co-ordinate workers engaged in processing chemicals, petroleum products, coal derivatives, rubber, plastics, and related materials:

Typical examples of occupational titles covered by this residual group definition are:

Foreman, Acid Plant(chem., n.e.c.)
Foreman, Explosives Preparation(explosives)
Foreman, Millroom(rubber)
Foreman, Naphthalene Plant (petrol. & coal prod.)
Foreman, Pigments(chem., n.e.c.; paint & varn.)
Foreman, Plastic Sheets(plastic prod.)
Foreman, Soap Processing(soap)

8161-MIXING AND BLENDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

This unit group includes occupations concerned with operating and tending equipment that combines, mingles or fuses chemicals and related materials to produce a single mass or compound or to achieve quality, texture, colour or similar characteristics.

**8161-110 COLOURMAN(pulp & paper) DPT:361
beater-room lead-hand.
GED: 3 SVP: 7 EC: I 7 PA: L 4 7**

Develops colour-formulas, and prepares instructions for mixing dye with pulp to produce paper and paperboards of various types, colours and shades, as specified by production orders:

Determines composition of colour sample, using colour reference book, or follows instructions from analysis made by laboratory. Mixes pulp with water, size, filler and other ingredients to make sample of furnish (raw materials) of type and quality of paper or paper-board specified. Weighs and mixes pigments to prepare dye, and mixes dye with furnish. Pours furnish on screen to make handsheet sample. Visually compares colour of handsheet with colour sample, and modifies formula to adjust colour mixture as required. Calculates weights and proportions of pigments and other materials required to make production batch of dye. Prepares formulas and gives mixing directions to other workers. Monitors colour of pulp mixture and finished paper, and adjusts formulas to maintain specified colour shades. Prepares production reports.

May consult with other workers on technical problems related to colour mixing, formula improvement and other production matters.

**8161-112 BLENDER(petrol. & coal prod.) DPT:482
compounder.
GED: 3 SVP: 7 EC: B 6 7 PA: L 2 4**

Controls equipment to blend petroleum products with chemicals, tetra-ethyl leads, distillates of crude oil, and other additives to produce commercial fuels, lubricating oils, and asphalt, according to formula: Reads blending schedules to determine type and quantity of materials to be blended. Manipulates controls to start pumps or notifies pumpman to transfer gasoline or specific oil product to blending tanks. Computes quantities of additives or sets weighing machine or gauges

that automatically weigh quantities of additives in ratio to quantity of gasoline or oil. Turns handwheels to open valves and spray-jets to admit and circulate specified quantities of gasolines, oils, additives and chemicals in mixing tanks. Moves controls of pumps, agitators and mixers to blend mixture mechanically or with air agitation. Observes temperature gauges and turns valves to regulate and maintain specified temperature in tanks. Draws sample of mixture for laboratory analysis. Repeats blending process as required, or starts pumps to draw off blended gasoline or oil to storage tanks or loading racks. Opens valves to draw off chemical and lead residue. Records quantity blended, materials used, and blending time. Lubricates, adjusts, and performs minor repairs on pumps, agitators and mixers.

May check blend of mixture, using spectroscope. May be designated according to type of additive or product blended; for example, Asphalt Blender
Ethyl Blender
Lube-Oil Compounder

**8161-114 GREASE MAKER(petrol. & coal prod.) DPT:582
GED: 3 SVP: 7 EC: I 3 4 6 7 PA: M 4 7**

Controls steam- or electrically-heated kettles in which ingredients are heated and mixed to produce various grades of lubricating grease, according to specifications:

Weights and pours specified quantities of ingredients, such as melted fats, mineral oils and soda or lime base into kettles. Starts agitator to mix batch to required consistency, and adjusts kettle temperature controls to form basic grease from mixture. Turns off heat and adds water, dye and various mineral oils to grease, in designated proportions for emulsification. Restarts agitator and reheats mixture to produce grease of required texture. Forwards sample of batch to laboratory for testing, and adjusts batch according to test results. Keeps records of product mixed, batch number, evaporation loss, time of start and finish of batch and sample test results. Performs colour tests with standard samples for various colours of grease. Sets valves, manifolds and pump controls, and makes hose connections, using hand tools, to transfer products to storage.

**8161-118 COLOUR MATCHER(chem., n.e.c.) DPT:481
shade matcher.
GED: 3 SVP: 6 EC: I 7 PA: M 4 7**

Mixes pigments to formulate colouring solutions used in dyeing leather materials:

Compares sample of desired colour with standard colour specifications to determine pigments required. Weighs or measures and mixes selected pigments or dye-stuffs with thinning and drying solutions and solvents until mixture matches sample. Verifies colour by dyeing material and comparing it with sample. Computes and records specifications necessary to produce desired colouring solution. Mixes batches of colouring solutions to replenish stock.

May inspect dyed material to determine uniformity of coverage.

**8161-122 TINTER(paint & varn.) DPT:581
shader.
GED: 3 SVP: 6 EC: I 5 7 PA: M 4 7**

Mixes ingredients such as pigments, resins, solvents, and oils with paints, enamels or lacquers to match colours, following formulas and standard colour samples:

Mixes ingredients according to formula to match a given colour sample, using sample mixing mill. Presses switch to start agitator in tank containing basic paint product. Pours specified amounts of pigments into tank to colour basic product. Smears sample of batch on glass or paper, using spatula or brush. Compares samples with standard colour, using colorimeter to attain desired shade. Records ingredients added on batch ticket. Ladles sample into container. Writes identifying data on container and submits sample to laboratory for final colour, gloss, weight and viscosity tests. Weighs sample and calculates weight per gallon.

May remove foreign matter from paint, using spoon or ladle. May determine specific gravity, using hydrometer. May test for viscosity, using viscometer. May be designated according to product tinted; for example, Enamel Shader
Lacquer Shader
Paint Tinter

8161-126 SOAP MAKER(soap) DPT:682
GED: 3 SVP: 6 EC: 1 PA: M 3 7

Controls equipment that heats and mixes ingredients to produce soap: Charges mixing kettle with prescribed amounts of ingredients, such as tallow and lye, by opening valves or using shovel. Admits water and steam through bottom of tank to heat and agitate mixture. Determines degree of alkalinity of caustic soda in mixture, using pH meter, and adds soda, salt or water as required. Observes mixture to detect variations, and determines when boiling and agitating cycles are completed, by observing consistency and homogeneity of product. Allows batch to cool and settle for specified time. Raises or lowers pumpline to locate separation level of neat (pure soap) and nigre (residue), and starts pump to transfer neat to next process. Lowers pumpline to bottom of tank to transfer nigre to reclaiming tank. May calculate amount of ingredients needed to make various soaps and cleaning compounds, according to formula.

8161-130 CATALYST OPERATOR, GASOLINE(chem., n.e.c.) DPT:562
GED: 3 SVP: 5 EC: B 5 7 PA: M 2 4

Controls equipment that combines and dries chemicals, to make catalysts used in the manufacture of high octane gasolines: Dumps dry ingredients such as sodium silicate, caustic soda and other chemicals into electric mixing vats. Opens valves to admit prescribed amounts of water and sulphuric acid. Observes thermometers and flow meters and adjusts temperature and flow controls. Turns handwheels to open valves and allow mixture to flow from mixing vats to vacuum filters that remove excess water. Starts pumps that force mixture through spray dryers where particles of catalyst are formed, and regulates temperature and speed of spray by turning dials on control panel. Pumps catalyst particles from bottom of dryers to washer- filters for removal of impurities. Turns valves to regulate flow of catalyst through hot-air-steam dryers, and observes temperature and speed of flow to insure proper drying. Keeps record of batches processed.

8161-134 MAKE-UP MAN(chem., n.e.c.) DPT:562
GED: 3 SVP: 5 EC: 1 PA: L 5

Controls equipment to produce ingredients such as polymerization emulsions, solutions and stabilizers used in the production of synthetic rubber: Pumps liquid chemicals to metering or weigh tanks. Moves heater controls to attain specified temperature in system. Starts agitator and opens valves to regulate and admit chemical agents into mixing tanks in prescribed sequence. Directs other workers to dump preweighed amounts of solid materials into tanks. Regulates flow of rubber constituents to storage or to rubber synthesis work areas, according to production needs. Observes precautions to maintain safety standards. Maintains records of materials used and shift production, process times, temperatures and gauge readings. Receives and stores materials.

8161-136 ACID MAN, NITROCELLULOSE(explosives) DPT:582
GED: 3 SVP: 5 EC: 1 6 PA: L 4

Controls mixing tanks and auxiliary equipment to combine acids to produce solutions for manufacturing nitrocellulose: Pumps specified liquids through metering or weighing tanks into mixing tank. Starts tank agitator to mix ingredients for specified time. Draws samples of product for laboratory analysis and transfers additional ingredients to tank until product meets specifications. Pumps mixed product to storage or other processing units, such as heat exchangers, driers and nitraters. Packs valves, replaces gaskets and cleans fume lines, using hand tools. Keeps records of mixing time, gauge readings and number of batches mixed. May tend refrigeration unit used to maintain temperature within prescribed limits through various stages of processing.

8161-138 NITROGLYCERINE-NITRATOR OPERATOR(explosives) DPT:582
GED: 3 SVP: 5 EC: 1 6 PA: L 4 7

Controls continuous-process equipment to combine ingredients for manufacturing nitroglycerine: Turns valves to designated settings to start flow of glycerine, glycol and mixed acid into mixing chambers, flow of brine through cooling

coils, and flow of sodium carbonate and acetone into final mixture to neutralize excess acid. Monitors thermometer and pressure gauges on control panel, and turns valves to maintain temperature and pressure system within prescribed limits. Observes reaction of mixing ingredients through glass panel to detect abnormal colour reactions. Pushes safety button, if temperature and pressure gauges indicate explosion is imminent, to stop flow of ingredients and dump nitroglycerine into water-filled vat. Fills in daily check-off list and operating reports for security and statistical purposes. May control batch-process equipment to combine ingredients to produce nitroglycerine.

8161-142 TANNING-SOLUTION MAN(leather tan. & fur dress.) DPT:682
solution mixer.
GED: 3 SVP: 5 EC: 1 5 7 PA: M 4

Controls series of mixing vats to mix and boil tanbark, quebracho, chemicals and water to prepare solution for leather tanning: Weighs specified amounts of materials on scale and dumps them into vat. Opens valves to admit water and steam into vat. Adjusts steam valve, and observes thermometer to maintain solution at specified temperature. Tests sample of solution for specific gravity, using hydrometer. Adds ingredients to solution to obtain specified density. Starts pump to transfer solution from vat to storage tank.

8161-146 BANBURY-MIXER OPERATOR(plastic prod.; rubber) DPT:682
banbury operator; plasticator.
GED: 3 SVP: 5 EC: 1 5 7 PA: M 4

Operates machine to mix ingredients into compounds for further processing into articles, such as rubber tires, tubes, plastic sheeting, and wire insulation: Dumps ingredients into mixing machine hopper from tote boxes carried on monorail system or from hand trucks, or directs other workers in performing these tasks. Starts machine and adjusts valves to admit steam or cooling fluids to steam jacket. Starts mixing device to aid in blending and densifying mixture. Stops machine when mixture reaches desired consistency. Turns lever to unload mixture into container, conveyor, or mill for sheeting. May operate auxiliary equipment to break up, grind, dry or otherwise prepare mixture for final processing. May weigh crude rubber, plastic scrap and other ingredients from bags or barrels, and dump ingredients into tote boxes for delivery to mixing machine.

8161-150 KETTLE OPERATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 3 4 6 PA: H 2 4

Operates mixing kettles or tanks to mix and process ingredients according to formula, to make adhesives, glues, pastes and similar products: Counts number of bags or measures or weighs specified amounts of ingredients. Turns valves to admit water or steam to kettle or tank, steam coil, or jacket to heat compounds. Starts agitator or mixing paddles, and dumps or pours ingredients into kettle or tank in prescribed order. Mixes and cooks compound for specified time and adjusts steam valves to regulate temperature. Turns valve to drain kettle or tank and transfer product to shipping containers, drums, storage tanks, or packaging machines. Cleans kettle and equipment using water, solvents, brushes, and scraper. Draws test samples and delivers them to laboratory for analysis. Adds ingredients to bring mixture to specifications.

8161-154 WHITE-LEAD MIXER(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 6 7 PA: H 4

Controls mixing equipment to treat lead oxide with acid to produce white lead: Weighs lead oxide powder, and dumps it into mixing vat. Turns valve to add specified amount of water to vat, and pulls switch to start agitator in vat to form slurry. Depresses button to start pump and transfer slurry from mixing vat. Opens air pressure valve to atomize slurry entering mixing chamber. Turns valves to admit specified quantities of acetic acid solution and carbon dioxide into mixing chamber to transform atomized slurry (lead oxide powder) into white lead. Reads gauges and adjusts steam valves to maintain specified temperature in mixing chamber. Sends sample of white lead to laboratory for analysis. Pours concentrated acid into acid supply vat to

maintain solution at specified strength. Starts pump to transfer white lead from mixing chamber into storage tanks. Connects and disconnects hoses between mixing vat, mixing chamber, and storage tanks, as required, using wrench.

8161-158 INK MATCHER(chem., n.e.c.) DPT:684
inkman.

GED: 3 SVP: 5 EC: I PA: L 4 7

Blends ingredients according to formula to produce coloured printing inks that match samples or customers' specifications:

Reads specifications on work order and studies colour specimen to determine paper type, ink colour and printing process to be used. Mixes ingredients and solvents listed in standard formula to produce ink. Formulates small quantity of ink specified by work order and tests it for shade and opacity on similar material. Adds ingredients to mixture and repeats tests until specifications are met and precise ratios of ingredients determined. Determines ink viscosity by timing flow from test cup, and adding desired amount of solvent to meet viscosity requirements for kind of ink and material specified. Cleans tools and mixing equipment, using solvents, wipers and brushes.

8161-162 MIXER OPERATOR(explosives) DPT:482
GED: 3 SVP: 4 EC: I 6 7 PA: H 4

Operates mixing machines and auxiliary equipment to produce explosives, such as dynamite, smokeless powder or solid-propellant rocket fuel:

Computes quantities of chemical agents required for batch of given size, according to formula. Opens bags of solid materials and dumps specified quantities into conveyor hopper of mixer. Starts pump to add liquid chemical agents, such as nitroglycerin, wetting agents, catalysts or solvents into machine. Sets controls to regulate temperature of coils in mixer jacket according to gauge readings and product specifications. Starts mixer to blend ingredients for specified time, or until prescribed reaction occurs. Moves dump lever, or shovels materials into containers for storage, shipment, or further processing.

May tend auxiliary equipment units, such as dissolving tanks, ovens or vibrating screens to prepare or further process materials.

8161-166 WET-EXPLOSIVE MIXER(explosives) DPT:582
GED: 3 SVP: 4 EC: I 5 6 PA: L 3 4 7

Measures, blends and processes explosive ingredients to produce wet-priming mixture used in rimfire cartridges and detonators:

Measures and dumps specified amounts of ingredients, such as red lead, lead styphnate, and tetrazene into mixer bowl. Pushes button to start mixer and blend ingredients to form lead azide. Measures, screens, and blends specified amounts of sulphonates and nitrates by hand to make styphnic acid, used for blending with lead azide. Adds water in prescribed amount to tank containing styphnic acid, and allows solution to settle for specified time. Opens tap at bottom of tank to remove water until correct percentage of water in styphnic acid mixture is reached. Adds lead azide to styphnic acid in settling tank, and mixes ingredients with rubber spatula. Reads thermometer, and turns valves to adjust temperature and rate of temperature rise to facilitate removal of adsorbed solids. Opens valve at bottom of tank, and filters liquid through cloth and into containers. Records temperature and rate of precipitation on chart. Examines samples under microscope to ensure that crystals meet specifications. Scoops wet priming mixture into cloth-lined pails and carries pails to dry magazine. Records temperature, drying time and production in log book.

8161-170 CRUTCHER OPERATOR(soap) DPT:662
GED: 3 SVP: 4 EC: I 6 7 PA: H 4

Operates crutchers (steam-jacketed equipment) that mix specified quantities and types of liquid, powder and paste ingredients to form slurry for processing into soap:

Pulls slide from discharge chute of hopper to admit dry materials into scale bin. Weighs ingredients according to formula and opens valves to transfer materials into mixing equipment. Starts agitator to mix materials for prescribed period of time. Observes gauges and adjusts valves to maintain specified temperature. Weighs and dumps additional ingredients into mixer in designated sequence and rate, or adjusts scale tank and pumps in dyes and additional liquids. Tests acidity and alkalinity of mixtures, using standard test equipment, and adds chemical additive to obtain correct reading. Turns valve to pump

batch through filter unit to storage tank. Records number of batches mixed. Cleans pipe lines, tanks, pumps and filter by purging with steam and hot water hose.

8161-174 ORTHOPHOSPHATE-WET-MIX OPERATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: B PA: L 4

Controls flow of ingredients to premixer and reaction vessels, to produce orthophosphate liquor by reaction of phosphoric acid with soda ash, preparatory to further processing:

Starts feed conveyors, premixer, pumps, exhaust fans and filter units in required sequence from control panel. Mixes water and soda ash in premixer to form slurry. Turns valves and observes flowmeters to regulate flow of phosphoric acid and soda ash slurry to reactor vessel. Starts agitator in reactor vessel to mix product. Turns valves to regulate flow of steam through vessel heating coils to attain reaction, observing thermometer to verify temperature. Lowers sampling rod into tank to obtain sample for laboratory testing. Turns valves to admit measured amounts of chemicals, as indicated by laboratory reports, to regulate chemical properties of mixture to specifications. Turns valves and starts pump to transfer mixture to spray drier-feed-tanks.

8161-178 SIZE MAN(chem., n.e.c.) DPT:682
pulp-size man; size-and-alum operator.
GED: 3 SVP: 4 EC: I 5 PA: H 2 3 4

Operates equipment to cook and mix materials according to formula, to make size for use in making paper:

Turns valves to fill cooking vats with metered volumes of liquid ingredients, and dumps measured amounts of solid ingredients into vats, according to formula. Turns steam valves to maintain specified temperature for cooking starch or resin with water, lime, and chemicals. Opens drain valve or starts pump to transfer cooked material to mixing machine. Dumps specified weights of alum, clay or titanium dioxide into machine, and starts machine to mix ingredients for specified length of time. Adds chemicals to mixture, according to formula, to prevent decomposition. Takes sample of mixture and forwards to laboratory for analysis. Turns valves and starts pumps to transfer size to and from storage tanks.

8161-182 WOOD-PULP CAUSTIC-LIQUOR MAKER(chem., n.e.c.) DPT:682
wood-pulp causticiser; caustic man.
GED: 3 SVP: 4 EC: I PA: L 4 7

Controls equipment to mix and process green liquor (soda ash solution) and lime into caustic liquor used in cooking wood-pulp:

Monitors control panel to detect malfunctions indicated by signal lights or horn, and makes necessary control adjustments. Presses switches to start pumps and adjusts valves to control flow of water and lime into tank to make lime slurry of specified density. Adjusts valves to control flow of lime slurry and green liquor into reaction tanks in specified proportions. Turns steam valve to heat reaction tank to make caustic cooking liquor. Observes recorder charts to ensure temperature is maintained according to specifications. Operates controls to pump cooking liquor to settling tank. Makes standard titration tests at various stages of process. Turns valves to pump clear liquor to storage tank and lime sludge to sludge tank. Checks charts to determine levels of green, clear and caustic liquor in storage tanks.

8161-186 DYE MIXER(chem., n.e.c.) DPT:584
dye maker.
GED: 3 SVP: 4 EC: I 4 7 PA: M 3 4 7

Mixes dyes and chemicals for use in dyeing products such as furs, felt and fabrics:

Weighs powdered or liquid dyes and chemicals according to specifications, using weigh scales and measuring utensils. Pours dyes and chemicals into pail or mixing tank. Turns valve to add desired amount of water to ingredients, and stirs mixture with hand paddle to dissolve dye. Dumps dye solution in pail into supply tank, or turns valves to transfer dye solution from mixing tank to supply tanks in dye room. Keeps inventories of dyes and chemicals and notifies supervisor as supplies are needed.

May dye sample swatch, compare dyed swatch with standard, and adjust dye solution to required colour.

8161-190 DRY-EXPLOSIVE MIXER(explosives) DPT:584
GED: 2 SVP: 4 EC: I 6 PA: L 4

Operates equipment that blends and screens ingredients in cloth, cone-shaped mixing and screening device to make primer charge for dynamite caps and detonators:

Selects and carries predetermined quantities of ingredients from storage magazines and dryhouse to mixing house, or weighs out specified amounts of ingredients. Positions containers in specified order on dumping shelf of mixing device. Moves dump arm by manipulating remote-control levers located behind cement wall to empty containers in mixing bag. Turns mixing crank specified number of times to move bag centre up and down to blend powders, observing operation in mirrors set at angles. Pours blended powder into rubber containers, by manipulating levers that activate remote-control arms. Fastens identification tags on containers and carries them to storage magazines. Washes equipment and premises to prevent accumulation of explosive dust, using alcohol-soaked cloths, brush, water hose and mop. Repairs screens and attaches bags to wall of mixing cylinder, using special lacing and tying technique. Records batch production data on work sheet.

8161-194 MIXER, WALLPAPER COLOUR(chem., n.e.c.) DPT:664
GED: 2 SVP: 4 EC: I PA: L 4 5 6 7

Mixes and matches colour base with colour tints for colour printing of wallpaper:

Examines colour scheme on wallpaper sample, and determines, from experience, quantities of pigment needed. Selects and ladles portions of pigments into mixing containers. Mixes pigments into colour base, using paddle or electric agitator. Brushes sample of pigment mixture on patch of wallpaper, and compares it with colour sample. Adds pigments to obtain exact colour shading.

May transfer drums of pigments to storage area, using hand truck. May be designated according to process used; for example, Ground-Colour Mixer
Print-Colour Mixer

8161-198 PAINT MIXER, HAND(paint & varn.) DPT:684
GED: 2 SVP: 4 EC: I 7 PA: M 4 7

Mixes paints and other coatings by hand, according to formulae:

Pours materials, such as pigments, paint paste, vehicle and thinner into can. Stirs mixture with hand paddle. Compares mixed liquid with desired colour sample to ensure that it matches. Blends colours to obtain desired shades. Tests specific gravity of mixture using hydrometer.

May take stock and prepare stock record sheets.

8161-202 COMPOUNDER(pharm. & toil.; soap) DPT:585
GED: 2 SVP: 4 EC: I 7 PA: H 4 7

Tends tanks and compounding kettles that mix and blend flavours, perfumery solutions, colour solutions, essential oils and aromatic synthetics for use in manufacture of soaps, perfumes, cosmetics and other toilet preparations:

Weights or measures specified types and quantities of liquid ingredients according to formula, using scale tank or graduate. Measures powdered ingredients, using metric balance or avoirdupois scales. Drains solution from scale tank through filter unit to remove foreign particles. Dumps powdered chemicals and pumps solution into compounding kettle that automatically washes it to remove odours, or observes thermostat and adjusts valves to heat solution as specified. Pumps solution into agitator tank that blends it for specified time, and through filter unit for further purification. Observes solution for colour, or draws samples at various stages for laboratory analysis. Evaluates product by smelling. Cleans pumps, filters, tanks, piping and barrels, using steam hose and hot water. Records and submits stock and production reports.

May tend mill to grind or blend ingredients.

8161-206 COLOUR-WEIGHER-AND-MIXER(linoleum prod.) DPT:585
GED: 2 SVP: 4 EC: I 6 7 PA: VH 7

Weights pigments and tends mixers that blend ingredients used in production of hard surface floor covering:
Reviews pattern schedule to determine colours required. Moves

containers of designated pigments from storage area to scales, using hand truck. Weighs prescribed pigments, dumps pigments into containers, and marks containers, to indicate sequence in which colour should be charged into mixer. Pours ingredients into mixing machine, and pulls lever to lower lid. Starts and runs mixer for specified time. Verifies consistency of mix, using viscometer. Starts pump and opens valve to transfer batches of mix into storage tanks. Takes samples of mix for laboratory analysis, and keeps production records.

May tend mottling machines that blend coloured mixes to achieve specified patterns or shade combinations for floor covering, and be designated accordingly,
Mottler Tender

8161-210 RUBBER-CEMENT MIXER(rubber) DPT:585
GED: 2 SVP: 4 EC: I 6 7 PA: M 3 4

Tends agitator drum that mixes latex or crude rubber with solvents to produce liquid rubber cement:

Weights and measures specified amounts of rubber, chemicals and solvents, using balance scales and graduated beakers, and loads ingredients into drum. Breaks down full batch formulas into partial batches and samples. Stirs mixture to form cement using electric-powered paddles. Opens petcock of drum and empties cement into containers. Records types and quantity of cement mixtures produced.

May submit sample of each batch to laboratory for testing. May turn valves to admit steam and heat agitator drum to specified temperature for mixing.

8161-214 VINYL-ASBESTOS-BLENDING-MACHINE TENDER(linoleum prod.) DPT:665
roller boss.
GED: 2 SVP: 4 EC: I 5 7 PA: H 4 5

Tends machine that blends granulated vinyl or asbestos of two or more colours preparatory to forming marbelized vinyl or asbestos tile: Starts machine by pressing buttons, and turns valves to heat rollers to specified temperature to melt and mix granulated vinyl and asbestos. Shovels or dumps premeasured amounts of vinyl or asbestos granules of prescribed colours between rollers, until mixing is complete. Signals other workers to cut off and catch marbelized material emerging from machine. Directs helpers who assist in mixing, rolling, and cutting product.

8161-218 MIXER(chem., n.e.c.; paint & varn.) DPT:685
GED: 2 SVP: 4 EC: I 5 7 PA: H 3 4 7

Tends machines that blend solid and liquid ingredients to make products, such as inks, paints, lacquers and binders, following formulas, performing any combination of the following duties:

Sets dials of pump meters to admit specified amounts of liquids, such as oils, solvents and water into mixing machine. Weighs dry ingredients, such as colour concentrates, gums, and resins, as indicated on batch ticket, into mixer by hand, or using chain hoist. Starts agitator that mixes ingredients for specified time. Operates jar mill or ball mill to mix and grind ingredients. Draws samples from batch for laboratory tests, and adds ingredients to mixture as indicated by laboratory analyses. Transfers raw material from storage to process area, using hand truck. Cleans equipment using rags, solvent and scraper.

May be designated according to product mixed; for example,

Glass-Enamel Mixer(paint & varn.)

Ink Mixer(chem., n.e.c.)

Lacquer Blender(paint & varn.)

Paint Mixer(paint & varn.)

Plastic Mixer

Seasoning Mixer(chem., n.e.c.)

Shellac Mixer(paint & varn.)

8161-222 CAUSTICISER MAN(chem., n.e.c.) DPT:685
GED: 2 SVP: 4 EC: I 6 7 PA: M 3 4

Tends equipment to reconstitute caustic solutions for use in electrolytic cells:

Turns valves and starts pumps to fill recausticising tank to required level with specified amounts of sodium or potassium hydroxide and lime. Starts mixer in tank to mix ingredients. Opens water valve to dilute mixture and obtain specified concentrations, according to type of product. Draws samples periodically and performs titration and specific gravity tests, using standard equipment, to determine concentration of solution being formed. Turns valves to transfer solution

through filters and to pump clarified solution to other parts of plant or to storage tanks. Clears stopped pipelines and repairs equipment, using hand tools.

8161-226 CLEANING-COMPOUNDS MIXER(chem., n.e.c.) DPT:685

GED: 2 SVP: 4 EC: I 7 PA: M4

Tends mixing kettles to mix and heat chemical ingredients to make cleaning and polishing compounds:

Weighs or measures specified amounts of ingredients, such as detergents, aromatics and abrasive powders, on scale, or in measuring containers. Pours or scoops ingredients into mixing kettles. Turns valve to regulate steam pressure to maintain specified temperature in kettles. Starts agitator to mix ingredients for specified time. Draws samples from batch at regular intervals for laboratory tests, and adds ingredients, or varies temperature or mixing time, as indicated by laboratory analyses. Opens valve to drain mixed ingredients into container filling machine.

May mix ingredients, such as dye, oil, sand, sawdust and water to make sweeping compound and be designated accordingly, Mixer, Sweeping Compounds

8161-230 COLOUR MIXER(chem., n.e.c.) DPT:685

GED: 2 SVP: 4 EC: I 5 PA: M 2 4 7

Tends machines that grind and mix resin, stabilizer and pigments to make colouring for plastics materials:

Positions empty hopper on scale manually, or using hoist, and dumps sacks of resin and stabilizer into hopper. Scoops specified quantity of pigment from container into balance scale pan, and pours it into hopper. Empties ingredients into tumbler, and presses button to start machine to mix ingredients for specified time. Connects hose between tumbler outlet and attrition grinder, using wrench. Positions hopper under grinder, using lift truck, and opens tumbler outlet, using lever, to run mix through grinder and into hopper. Dumps mixture into sacks or drums, and labels them for storage. Draws sample for laboratory test, and weighs additional ingredients to be used in mixed batches for colour improvement.

8161-234 TRACER-POWDER BLENDER(explosives)

GED: 2 SVP: 4 EC: I 6 PA: L 4

Tends machines and equipment that prepare and blend dry and liquid chemicals to produce highly flammable mixtures of specified composition for initiatory powders used in detonators, fuses and tracer bullets: Weighs and measures amounts of ingredients according to formula, using bench scale and beakers. Tends remote-controlled tumbling barrels to blend chemicals, adding ingredients in designated sequence, at timed intervals. Tends steam-heated oven to dry ingredients, and tends remote-controlled ball mill to pulverize dried ingredients, adding required number of rubber balls to achieve prescribed degree of pulverization. Sifts powder, using hand sieve. Pours finished mixes into rubber pouches, attaches printed labels, and conveys pouches to storage magazine, using hand truck. Brushes and washes equipment and premises, using hose, to prevent dangerous accumulation of powder.

8161-238 MIXER OPERATOR, CARBON PASTE(chem., n.e.c.) DPT:565

GED: 2 SVP: 3 EC: I 5 PA: L 4 5

Tends machines that mix ground coal, coke, anode butts and pitch into carbon paste used to make electrodes:

Sets automatic scale and steam regulator to specified weight and pressure. Starts equipment and signals other workers to charge mixer with specified amounts of coal, coke, butts and pitch. Turns valve to pour liquid pitch into mixer. Presses switches to open door and pulls lever to discharge paste into buckets on truck. Records charging and discharging time of mixer.

8161-242 BATTERY-PASTE MIXER(chem., n.e.c.) DPT:585

GED: 2 SVP: 3 EC: I 6 7 PA: M 4 7

Tends mixing machine or mulling mill to mix ingredients into paste for storage-battery grids:

Measures or weighs specified amounts of oxide, water and acid, using barrels, scoops or automatic weigh scales. Dumps barrels of oxide into

mixer, or into storage pit equipped with bucket elevator, or screw conveyor leading to mixer. Presses switch to start and stop mixer. Turns valves to add specified amounts of water and acid to oxide. Tests sample of paste for temperature, plasticity and density, using probe thermometer, penetrometer, and gram scale, and records results. Dumps mixture into cart and hauls to pasting machine, or pulls lever to dump paste into hopper of pasting machine. Records batch weight and starting and withdrawal time. Cleans machine, using water and brush.

May tend equipment to heat and mix ingredients of liquid paste used to coat inside of dry cell battery containers, and be designated accordingly,

Liquid-Battery-Paste Mixer

8161-246 COATING-COMPOUND MIXER(chem., n.e.c.)

DPT:585

GED: 2 SVP: 3 EC: I 5 6 7 PA: H 4 7

Mixes ingredients to produce lining and coating compounds for tin cans:

Measures and pours specified amounts of ingredients, such as concentrates and solvents into barrel, using measuring can. Lowers agitator into barrel, and starts machine to mix solution. Tests viscosity with viscosimeter, and adds solvent or concentrates as required. Pumps compounds from mixing barrel to storage tank and coating machine reservoirs, or delivers compounds to coaters in containers filled from mixing barrel. Transports barrels and containers, using hand truck. Stacks barrels on racks, using chain hoist. Observes safety precautions in mixing and storage areas to minimize accumulation of explosive vapours arising from lacquers or other compound ingredients. Issues and requisitions materials and keeps stock records.

May mix sealing solutions or soldering fluxes. May mix solutions or compounds manually. May distribute product to production machines.

8161-250 FIBREGLASS-BINDER MIXER(chem., n.e.c.)

DPT:585

GED: 2 SVP: 3 EC: I PA: L 4

Tends mixing machine that mixes binder fluid used to promote cohesion in the production of fibreglass sliver or mats:

Connects feed lines to mixer and opens valves to dump ingredients into mixing vats, according to formula. Turns valve to start flow of water and steam into vats, and starts portable or power mixer to agitate ingredients for specified time. Observes temperature charts and thermometers to determine if specified temperature is maintained. Turns valve to increase flow of steam or water to regulate temperature of mixture. Dips beaker into vat to obtain sample of binder fluid and delivers sample to testing room. Adds ingredients to mix as indicated by test results, or turns valve to start flow of binder fluid into specified circulatory tank. Records number of batches mixed, amount of ingredients used and net gallons of binder fluid mixed, for inventory and production records.

8161-254 LIME-SLUDGE MIXER(chem., n.e.c.) DPT:585

GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends mixing tank in which chemicals and colours are mixed with lime sludge to obtain filler used to improve finish of paper:

Adjusts valves to control flow of sludge from storage tanks through filter screen into reaction (mixing) tank. Pumps acid and alum into mixing tank, and adds measured amounts of pigment, using shovel. Pulls lever or pushes buttons to start agitator that stirs mixture. Weighs specified samples of treated sludge and compares them with standard chart to determine density. Screens sample through wire mesh to detect presence of foreign matter. Records test results and quantities of filler processed.

8161-258 NEUTRALIZER(soap) DPT:585

GED: 2 SVP: 3 EC: I 6 7 PA: H 2 4 7

Tends measuring and mixing equipment to neutralize alkaline paste used in preparation of detergents:

Turns valves to charge neutralizers with specified liquid ingredients and starts agitator. Draws samples, makes standard titration tests, and records results. Tends pumps to keep supply of liquid ingredients in measuring tanks. Handles drums and bags of raw materials, using hoist. Weighs materials, using platform scale. Dumps limestone into neutralization tubes by hand. Starts pumps to transfer neutralized

products to storage tanks. Washes neutralizers, pipe lines and tanks, before changeover to different product, using water and hose. May add dye to colour detergents, to match standard sample.

8161-262 NITROGLYCERINE NEUTRALIZER(explosives) DPT:585

GED: 2 SVP: 3 EC: I 6 PA: L 4

Tends vats to wash and treat partially stabilized nitroglycerine, to neutralize acids remaining from nitrating process in explosives manufacture:

Introduces stream of air from bottom of vat containing soda water and nitroglycerine to agitate and mix product for specified interval. Turns off air to allow mixture to settle and opens tap to draw off wash water. Prepares soda-ash solution in mixing tank, according to formula, admits solution to vat to neutralize remaining acids, and starts agitating airflow. Tests mixture with litmus or other chemical indicator, and rewashes nitroglycerine when test is neutral. Observes transfer of nitroglycerine from vat to buggies. Keeps record of amount of nitroglycerine processed.

May transport nitroglycerine from storage tanks to mixing machines, and be designated accordingly, Nitroglycerine Distributor

8161-264 MIXER, EXPLOSIVES(explosives) DPT:685
composition mixer.

GED: 2 SVP: 3 EC: I PA: M 3 4 7

Tends machine that mixes chemicals, according to formula, for use as explosive ingredients in pyrotechnics:

Examines chemicals to ensure that colour and texture conform to specifications. Weighs prescribed quantities of chemicals, using scale. Mixes screened powders to obtain uniform blend and mixes blended material with additional chemicals, using mixing machine. Cures and dries mixture according to specified procedure.

May transport ingredients from storage to mixer or store mixture in dry room, using handtruck. May record number and date of batches mixed, and formulas used. May tend direct-and remote-controlled equipment to blend priming mixtures for small arms ammunition primers and be designated accordingly. Priming-Powder Mixer

8161-266 ACID-CORRECTION MAN(syn. fibres) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4

Prepares and regulates flow of chemicals to acid-spinning bath that coagulates cellulose slurry filaments into rayon:

Meters out prescribed types and quantities of bath ingredients, according to instructions. Presses lever to dump ingredients, such as caustic soda or sulphuric acid and sodium sulphate into circulating tank for transfer to heating tank and spinning bath into which cellulose slurry is being extruded. Turns valves to control flow of mix through circulating tank, spinning baths and acid-recovery tank, adding ingredients to maintain solution at prescribed standard. Cleans equipment, using water hose.

May test acidity or alkalinity of bath at specified intervals, using pH meter.

8161-270 BATCH MIXER(soap) DPT:685
mixer operator.

GED: 2 SVP: 3 EC: I 5 7 PA: M 4 7

Tends mixer that compounds coloured cleaning, detergent and soap powders:

Measures and dumps prescribed amount of colouring agent and water into agitator tank to make colouring liquid, and opens valves to admit colouring mixture into mixer. Weighs cleaning powder ingredients, and blows them into mixer from bin, using compressed air system. Presses button to activate mixer that blends ingredients for designated period of time. Stops machine and opens valve to discharge coloured cleaning powder into storage containers.

8161-274 CARBON-BLACK PELLETIZER(chem., n.e.c.)

DPT:685

GED: 2 SVP: 3 EC: I 3 5 7 PA: L 4

Tends machines that mix and dry powdered carbon black with water or binding agents to form pellets:

Starts machine and turns valves to admit and regulate flow of water or binding agents into rotating mixing drum. Examines and feels samples of product to verify that pellet size and moisture content meet specified standards. Opens inspection ports and observes conveyor system to drier to detect jamming. Tends rotary drum that dries pellets formed by wet process. Scoops sample pellets from mixing drum and drier for laboratory analysis. Monitors operation of furnace that supplies hot air for drying.

8161-278 COATING MIXER MAN(pulp & paper) DPT:685
clayman.

GED: 2 SVP: 3 EC: I 5 PA: H 4

Tends machine that mixes and strains filling and coating material for use in making paper:

Weights and dumps specified quantities of materials, such as clay, titanium dioxide, and formaldehyde into hopper of mixing machine. Turns valve to admit metered volume of water, and starts mixing machine. Starts pumps that force mixture through straining screen into storage tanks. Lifts screen from machine and washes screen with water hose. Delivers sacks of materials to mixer, using hand truck or fork lift truck. Plans mixing according to paper production orders. May weigh and add specified quantities of colour pigments to mixture.

8161-282 COMPOUNDER, LATEX(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4

Tends machines that mixes latex with chemicals for use in making foam rubber products:

Weights chemicals, such as sulphur and whitening agents, according to formula, and dumps them into electric mixer. Fills mixer with water and starts agitators. Opens valve and pumps chemicals into holding tanks. Pumps raw latex and chemicals from holding tanks into steam-jacketed mixing machine. Starts agitators that mix ingredients for specified time. Pumps latex mixture into tanks for storage.

May tend foamer machine that mixes air with latex for use in making foam rubber products.

8161-286 COPPER-SULPHATE MIXER(chem., n.e.c.) DPT:685

GED: 2 SVP: 3 EC: I PA: M 3 7

Tends mixing tank that blends sulphuric acid and copper sulphate for use in concentrating ores:

Weights out copper sulphate according to formula, and dumps it into mixing chamber. Opens valve to admit sulphuric acid to mixing chamber, and starts machine. Tests specific gravity and acidity to determine quality of mix, and adds ingredients to meet specified limits. Examines product to determine when mixing is completed. Turns valves to transfer fluid to settling tank and then to storage tank or trucks for shipment. Keeps record of amount of copper sulphate used. Shovels residue from mixing and storage tanks.

8161-290 FERMENTER, ANTIBIOTICS(pharm. & toil.) DPT:685

GED: 2 SVP: 3 EC: I PA: M 4

Tends fermenting tanks and auxiliary equipment to produce active constituents of antibiotic drug products:

Starts agitator in fermenting and mixing tanks, and adds prescribed quantities of ingredients, such as salt, sugar and yeast. Turns valves to adjust pressure and temperature to conform to specifications. Starts pumps to transfer mixture to fermenting tank. Opens valves to admit water, liquid seed antibiotic, and foam- preventing oil, according to critical specifications. Unbolts lid of fermenter tank and measures level of solution, using dipstick. Turns valves to transfer mixture to crystallization tank for further processing after specified period of time.

8161-294 MILLMAN(plastic prod.; rubber) DPT:685
GED: 2 SVP: 3 EC: I 6 7 PA: M 3 4

Tends mill or mills to knead, mix and blend rubber or plastic materials for further processing by performing any combination of the following duties:

Starts machines and turns valves on steam and cold water lines to regulate temperature of rolls. Washes or cracks crude rubber or plastic slab by passing it through chemical and water sprays, or corrugated mill rolls. Lays slab between rolls of warm-up mill. Cuts stock with knife, rolls it into bundle and feeds stock back into mill until rubber or plastic reaches specified consistency. Sprinkles dry chemicals or oils on plastic or rubber to impart specified colour or improve plasticity. Sets adjustable knives against mill, roll to cut continuous strip of rubber or plastic from mill and feeds strip onto conveyor that carries it to strip-off mill for further mastication, or to calenders, extruders or tubers. Cuts and measures thickness of mill stock, using knife and gauge. Adjusts clearance between mill rolls, using hand tools.

May be designated according to specialized operation performed; for example,
Calender Warmer
Cracker Operator
Feeder-Mill Operator
Millman, Warm-Up
Mix-Mill Tender

8161-298 MIXER, ASPHALT-ROOFING MATERIAL(petrol. & coal prod.) DPT:685
GED: 2 SVP: 3 EC: I 5 6 7 PA: VH 3 4

Tends mixing machines to combine tar, asbestos fibre, asphalt, or similar ingredients, to make roof coating and cement:

Starts mixing machine and turns valve to admit asphalt into mixing machine. Observes indicator gauge and turns valve to stop asphalt flow when specified amount has entered mixing machine. Presses button to start conveyor, and dumps other ingredients onto conveyor leading to mixing machine. Reads meter to determine consistency of mixture, and manually adds materials as needed. Draws off sample of mixture for laboratory testing. Keeps record of batches made, including deviations from written formula. Observes mixing process to ensure ingredients are mixed according to formula. Cleans mixing equipment, using steam hose, brushes and rags.

8161-302 MIXER, FERTILIZER(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: H 4

Tends mixing machine and auxiliary equipment that mixes ingredients to produce dry or liquid fertilizers, using one of the following methods:

1. Pulls lever to feed sulphate, phosphate and potash from feed bins into mixer. Starts mixer to mix ingredients for specified time. Stops mixer and pulls lever to dump batch of dry fertilizer onto conveyor. Collects and tags sample from each batch. Signals to have feed bins refilled, or assists in dumping bags of potash into feed bins by hand.
2. Observes gauges and turns valves to admit specified amounts of phosphoric acid and ammonia into mixer. Starts mixer to blend ingredients. Stops mixer after specified time, and turns valve to pump mixed materials into storage tank. Records weight, or volume of materials mixed.

May mix dichromate powder with water and steam to produce compound used to retard corrosion in steel fertilizer-storage tanks.

8161-306 MIXER, FOAM RUBBER(rubber) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4

Tends machine that mixes foam rubber particles with liquid latex to produce mixture used in the manufacture of products, such as cushions and mattresses:

Fills hopper of mixing machine with foam rubber particles, and adds or removes particles to obtain specified weight. Pulls lever to release contents of hopper into mixer. Weighs and pours specified amount of liquid latex into mixing machine and starts machine. Places containers under discharge spout of mixer and fills them with mixture. May grind foam rubber, using powered grinding machine.

8161-310 MIXER TENDER(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: H 4

Tends mixing machines, agitator tanks, kettles, mills, and ancillary equipment to compound and process chemicals and other ingredients, according to formula, to make powdered, liquid, or creamed products, such as drugs, cosmetics, deodorants, tooth paste, adhesives, coating agents, polishes, or match-head compounds, performing any combination of the following duties:

Weights and pours, pumps or shovels ingredients into mixing machines or ancillary equipment, such as sifters, mills, tanks, or kettles. Turns controls and observes gauges to achieve specified temperature. Starts agitator to mix ingredients for specified time, adding prescribed amounts of ingredients during mixing cycle. Takes sample of mixture for laboratory analysis, or tests mixture for specific gravity, viscosity, or acidity, using standard testing devices. Adds specified ingredients according to test results. Drains product into storage tanks, or pumps mixture through other machine units such as homogenizer or filter press for further processing.

May be designated according to product mixed; for example,
Coating-Solution Mixer
Match-Head Compounder
Tanning-Solution Preparer
Toothpaste-Blending-Machine Tender

8161-314 MIXER, VISCOSE(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 7 PA: L 4

Tends mixing equipment and tanks in which cellulose xanthate is formed and blended with caustic soda to produce viscose slurry for processing into rayon:

Couples feed lines and actuates controls to admit specified amount of carbon disulphide to churns (mixing chambers), previously loaded by other workers, with alkali-cellulose crumbs. Starts churns rotating, observes gauges and adjusts console controls to maintain temperature of churns and length of mixing cycles within specifications. Observes operation of mixing units that automatically form cellulose xanthate, transfer mixture to churns, and blend mixture with caustic soda to form viscose slurry. Opens valves and starts pump to transfer slurry from mixing units to holding tanks.

May test slurry for viscosity. May tend receiving tanks, filter press and aging tanks in which viscose slurry is prepared for spinning into rayon.

8161-318 PESTICIDE MIXER(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: H 3 4

Tends equipment to mix chemical ingredients, according to formula, for use in such products as insecticides, deodorants and fungicides:

Weights ingredients, using scale, and pours specified amounts of ingredients into mixer manually. Starts machine to mix ingredients for specified time, according to chart and formula. Pulls lever, or turns valves to discharge mixture into automatic container-filling machine, or observes discharge of mixture into filling-machine hopper or drums. May replace filled containers under discharge chute of mixer.

8161-322 PLASTICS-BLENDING-MACHINE TENDER(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: H 3 4

Tends machine that blends powdered or liquid plastic materials into compounds for subsequent processing or fabricating:

Measures or weighs materials in powdered or liquid form, according to formula, using scale and measuring containers. Pours ingredients into mixing chamber of paddle-type blender, feed hoppers or conveyors from sacks or containers. Starts blender or pump, by pressing switch, to spray plasticizer into blender and mix ingredients. Turns handle to set automatic timer, or stops mixing machine after specified time. Opens valve at bottom of blender, to discharge blended materials into carts or containers. Weighs carts and adds or removes portions of materials to adjust weight or mixture to specified blend, using shovel or scoop.

May record amounts of mixed materials used. May tend mixer equipped with crushing or screening mechanism that reduces or sifts materials to particles of uniform size.

8161-326 POWDER BLENDER(explosives) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: L 4

Tends equipment that blends various types of propellant powders, according to formula, for use in small-arms ammunition: Examines and verifies powder with identifying data on container and type of powder specified on work order. Pours powder from containers into partitioned hopper, and turns knobs to adjust rate of flow from hopper compartments to mix and blend powder according to formula. Verifies accuracy of hopper adjustment by drawing powder sample from each hopper compartment, using stop watch to time flow, and weighing samples to calculate rate of flow, or by starting agitator that shakes powders into blending tube, separating blended powders according to size, using sieve, and weighing each size. Readjusts hopper controls as indicated by rate-of-flow or sieve test until powder proportions match specifications. May tend tumbling machine to blend ingredients. May charge rim-fire cartridges with wet priming composition by hand.

8161-330 PROPELLANT BLENDER(explosives) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: H 4

Tends equipment that blends batches of propellant powder to obtain final product having uniform ballistics properties: Pushes button in control room to activate machinery that transfers powder back and forth continuously between top and bottom bins to effect thorough mixing. Opens vent in bottom bin to dump powder into containers for storage or further processing. Moves containers with hand truck between magazine and storage areas. May tend water or air circulating driers. May direct workers engaged in charging top bin of blender with powder. May tend mixer that blends tetryl powder and graphite for further processing into pellets and be designated, Tetryl Blender

8161-334 TEXTILE-TREATMENT-SOLUTION MIXER(chem., n.e.c.; textile) DPT:685
GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Tends equipment that mixes chemicals for use in bleaching, cleaning, mercerizing and finishing textile yarns and fabrics: Weighs or measures ingredients, such as peroxide, silica, caustic, solvents, emulsions, resins, starches and detergents according to formula, using scales or measuring containers. Pours ingredients from pail, or turns valve to admit specified liquids into mixing tank. Presses switch to start mixer, and allows solution to mix for specified time, or mixes solution with paddle. Turns valve to transfer solution from mixing tank to storage tanks or to machines in department. Tests solutions in storage tanks, using hydrometer, viscosimeter, or by titration to detect variations from standards. Adds necessary ingredients to restore solution to standard strength. Records test results, batches of solutions mixed, and chemicals used in each batch for production and inventory purposes. Turns valve to inject steam into solution to dissolve ingredients or cook solution to specified consistency.

8161-336 MIXER HELPER, WALLPAPER COLOUR(chem., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: I PA: M 4 7

Helps colour mixer to mix raw colours into colour-base required for ground-coating and printing of wallpaper: Draws specified amounts of raw colour and colour base from storage tanks, using pails. Moves ingredients to mixing area, using hand truck. Mixes raw colour into colour base, following oral instructions, using measuring cups, jugs and paddle to obtain desired tints and shadings. See also definition for term title, 02-160 HELPER (any ind.).

8161-338 BATTERY-ACID ADJUSTER(chem., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: I PA: L 4

Adjusts specific gravity of lead-acid battery electrolyte in mixing tank, by adding concentrated sulphuric acid or distilled water as required: Determines temperature and specific gravity of sulphuric acid solution, using thermometer and hydrometer. Turns valves and starts pumps to transfer water or acid to mixing tank as indicated by temperature and specific gravity readings. Controls flow of acid into tank to prevent undue rise in solution temperature, and opens valve to admit cooling

water to heat-exchanger as required. Turns valves and starts pumps to pump adjusted acid solution into storage tank.

8161-342 THINNER(paint & varn.) DPT:585
GED: 2 SVP: 2 EC: I 5 7 PA: H 3 4

Tends equipment to mix oils, resins, solvents and other liquid ingredients with paint products or materials, such as paint pigment, paste and varnish, to thin products: Weighs, lifts and dumps pails of specified ingredients into mixer. Turns valves on storage tank to admit specified liquids into mixer. Presses switch to start power agitator to blend ingredients. Turns valves or starts pump to transfer batch to storage tank or clarifying machine. Writes identifying code on tank, and records quantities and types of ingredients added to batch. May be designated according to mixture thinned; for example, Bulk-Pigment Reducer Paste Thinner Varnish Thinner

8161-346 GLUE BLENDER(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: H 4

Tends machine that blends specified types of powdered or granulated glue: Selects designated containers of glue and additives, such as tallow and zinc sulphate, and transfers containers to blending machine by hand or by use of hand truck. Dumps glue and additives into hopper, and starts machine that blends ingredients. Stops machine after specified period of time, and pulls levers to drain mixture from machine into bags or drums. Weighs filled containers. May weigh and mix ingredients according to formula, to prepare various types of glue or adhesives in small batches, by hand or using portable mixer.

8161-350 GROUND MIXER(chem., n.e.c.) DPT:685
claymill man.
GED: 2 SVP: 2 EC: I 7 PA: H 3 4

Tends machines that mix sizing compounds and powdered clay for use as background or colour base coating on wallpaper: Measures and mixes ingredients in electric mixer to make sizing compounds. Shovels powdered clay from bulk storage into wheelbarrow, dumps clay into clay mill, and turns valve to add water. Turns valve to release specified quantity of sizing compound from mixer into clay mill, and starts electric paddle to mix ingredients. Presses switch to pump solution from clay mill into holding tanks.

8161-354 PULP-BLEACH-LIQUOR MAKER(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 7 PA: L 4 7

Tends chemical reaction vats and mixing equipment to produce pulp bleaching solution: Presses switch to start pump, and opens valves to start flow of chlorine and sodium hydroxide into chlorinating tanks according to specifications. Starts agitator in tank to mix ingredients to form sodium hypochlorite bleaching solution. Makes titration test to determine completion of chemical reaction, using standard test equipment. Pumps bleach solution to storage tanks. May control reaction cells and absorption tower in which chlorine dioxide bleaching gas is formed from sodium chlorate. May connect pipe and hose lines to tank cars containing chlorine gas or other chemicals, using hand tools.

8161-358 SCREENER-AND-BLENDER TENDER,
COKE(petrol. & coal prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 6 PA: L 4

Tends machine that sifts and blends coarse and fine ground coke: Dumps coarse coke from chute onto vibrating screens. Starts screener to sift foreign materials from coke. Starts conveyors to carry sifted coke from screening area and fine ground coke from storage bins to top of blending hoppers. Dumps coarse and fine coke into blending hoppers, and starts rotary blender blades to mix them. Turns valves to release mix from blenders into storage hoppers.

8161-362 SODA-ROOM MAN(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends equipment to make soda cleaning solution used in beer bottle-washing machines:

Dumps bags of specified chemicals into mixing tank, and opens valve to add desired amount of water. Starts pump that transfers chemical solution to tank containing concentrated soda. Observes gauges and turns steam valve to heat solution to required temperature. Pumps used soda from washing machines into separators and settling and storage tanks, to remove solid matter and clarify solution. Opens hoppers in settling tanks to dump solid refuse into trucks or onto floor. Connects hoses and starts pumps to transfer concentrated soda from tank car or truck to storage tanks. Washes separator, settling tanks and floor, using hose.

May verify correct water level in tanks and strength and temperature of chemical solutions by reading gauges and thermometers.

8161-366 SOLUTION MAN(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 5 7 PA: M 4 7

Tends equipment that mixes chemicals and other ingredients in batch lots, to produce solutions for coating, impregnating or processing plastic materials:

Measures and weighs specified quantities of ingredients, such as sulphur, acid, resins, plasticizers and dyes, according to formula, using scale and graduates. Dumps ingredients manually into mixing machine or drum. Lowers agitator into vat or drum, using manual or electric chain hoists. Presses button to start agitator to mix ingredients. Draws sample of mixture for laboratory analysis, after mixing for specified time. Adds ingredients as required, using hand scoop, until batch meets specifications. Turns valves to discharge solution through strainer to storage container, or removes agitator and transfers drum to storage area, using hand truck.

May prepare and attach batch ticket to drum, listing date, type of mixture, quantity and other data. May replace strainers, using wrench.

**8161-370 PLASTICS-BLENDING-MACHINE-TENDER
HELPER**(chem., n.e.c.) DPT:566
GED: 2 SVP: 2 EC: 1 5 7 PA: H 3 4

Helps tend machine that blends plastic materials for subsequent processing or fabricating:

Transports materials from storage areas, using hand or fork lift truck. Empties drums, using bung wrench, and turns valves to admit liquid ingredients into blending tanks. Weighs sacks of dry materials such as clay, carbon black or powdered vinyl, on platform scale and records weight. Opens sacks, using knife, and dumps dry materials into blending machine. Presses switch to start agitator to mix ingredients. See also definition for term title, 02-160 HELPER (any ind.).

**8161-374 CATALYST-OPERATOR HELPER,
GASOLINE**(chem., n.e.c.) DPT:586
GED: 2 SVP: 2 EC: 1 5 7 PA: H 2 4

Helps equipment operator load specified amounts of chemicals into mixers and dryers to make catalysts used in the manufacture of high octane gasoline:

Loads material into mixing tanks by hand. Places pans in dryers, and empties caustic soda into containers on scale. Writes weight and nature of contents on label, and moves containers by hand truck to processing or storage areas. See also definition for term title, 02-160 HELPER (any ind.).

8161-378 CRUTCHER-OPERATOR HELPER(chem., n.e.c.) DPT:666
GED: 2 SVP: 2 EC: 1 PA: VH 4 6

Helps operate crutchers (steam-jacketted equipment) to mix liquid and solid ingredients by machine to form slurry for processing into soap:

Opens valves of supply tanks and waterlines as directed, to add prescribed liquid and paste ingredients. Weighs out and mixes dye and chemical solutions according to specifications, and dumps mixture into feed hoppers of crutchers. Changes and cleans strainers. See also definition for term title, 02-160 HELPER (any ind.).

8163-FILTERING, STRAINING AND SEPARATING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

This unit group includes occupations concerned with operating and tending equipment that treats chemicals and related substances by means such as agitating, centrifuging, filtering, screening, settling, straining, sifting and squeezing.

**8163-110 BITUMEN-EXTRACTION-PLANT
OPERATOR**(petrol. & coal prod.) DPT:682
crude oil treater.
GED: 3 SVP: 6 EC: 1 5 7 PA: L 2 3 4 7

Operates primary and final extraction plant units that separate bitumen from oil sands for further processing:

Operates switches to control conveyor belts that transport oil sands into primary extraction conditioning tanks. Turns valves and operates pumps to admit steam, water and caustic soda into conditioning tanks. Operates pumps to transfer slurry to cells that automatically separate sand from bitumen. Monitors automatic system that transfers liquid bitumen to final extraction tanks. Turns valves to admit specified diluents into final extraction tanks. Monitors temperature controllers that maintain required temperatures in extraction tanks. Operates pumps to transfer liquid bitumen into series of centrifuges. Starts centrifuges and adjusts rotation speeds to further remove waste materials from liquid bitumen. Turns valves and operates pumps to transfer extracted bitumen through heaters that burn off remaining waste materials. Collects bitumen samples from processing areas by bleeding feed lines or releasing valves in automatic sampling lines. Patrols processing area to inspect operating equipment and reports defects to maintenance department. Records production data in shift logbook.

May operate either primary or final extraction plant units and be designated according to type of work performed; for example, Final-Bitumen-Extraction Plant Operator
Primary-Bitumen-Extraction Plant Operator

8163-114 FILTER OPERATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 6 EC: B 7 PA: M 2 4

Operates tilting-pan filter unit and related equipment that separates phosphoric acid from slurry produced by reaction of sulphuric acid on phosphate rock:

Starts tilting-pan filter unit, pumps, vacuum pumps, and tank agitators. Turns valves and observes instruments to maintain slurry flow rates within specifications. Regulates speed of filter unit so that each pan moves successively under specified number of acid and wash systems to separate gypsum crystals from slurry. Pumps slurry to thickener unit where phosphoric acid settles out from concentrated slurry. Turns valves and operates pumps to transfer phosphoric acid to processing area and gypsum sludge to waste disposal area. Inspects equipment and notifies supervisor of abnormal conditions. Records operational data in logbook.

May replace filter cloths in tilting-pan filter unit. May replace process lines, using hand tools.

8163-118 CAUSTIC OPERATOR(chem., n.e.c.) DPT:662
GED: 3 SVP: 5 EC: B 5 6 7 PA: L 4 7

Controls equipment that converts recovered green liquor into white liquor used for cooking wood chips in pulp manufacturing process:

Observes dials, charts, flowmeters and signal lights on panel to determine level and temperature of solution in lime slakers and level of lime sludge in clarifiers. Operates pumps and screw conveyors to control flow of dry lime and recovered chemicals into lime slakers, causticized solution through clarifiers to storage, and lime sludge through washers to storage tanks. Obtains samples of causticized chemicals, and performs titration tests to determine alkalinity of

solutions. Maintains liaison with other operators to ensure continuous process flow. Patrols processing area to inspect operating equipment and reports defects to maintenance for corrective action. Records shift production data, test results and equipment performance in logbook.

8163-122 BENZOL AGITATOR OPERATOR(petrol. & coal prod.) **DPT:682**
benzene-washer agitator.
GED: 3 SVP: 5 EC: I 5 7 PA: L 2 4 7

Controls agitator tank to wash benzol, benzene, toluene and xylene with sulphuric acid and caustic soda to remove impurities: Turns valves and starts pumps to charge agitator vessel with specified amount of benzol or derivatives. Drains measured quantity of acid into vessel and starts agitator to mix contents for specified time. Stops agitator to allow acid and sludge to settle. Obtains sample of washed product for laboratory colorimetry test to determine need for further washing. Opens valve, using wrench to drain excess acid and sludge. Adds caustic soda solution to neutralize remaining acid, and measures alkalinity, using standard titration test. Adds water, agitates mixture to wash out traces of caustic, and drains off water after contents have settled. Pumps washed benzol or derivatives into storage tank. Turns valves to admit steam to sludge kettle, to solidify sludge. Lifts cover from kettle, using chain hoist, and removes sludge.

8163-126 DESULPHURIZER OPERATOR(petrol. & coal prod.) **DPT:682**
purification-plant operator.
GED: 3 SVP: 5 EC: B 5 7 PA: M 4 7

Controls equipment, such as vats, drum-filter, thionizer and absorber tower, arranged in series, to recover sulphur from coke-oven gas: Turns valve to admit coke-oven gas into absorber tower. Starts pumps to force solution containing arsenic compound and soda ash through tower. Pumps resulting foul solution into thionizer tower. Opens compressed air, and precipitating sulphur valves to form froth. Turns valve to drain off froth. Pumps slurry into drum-filter and vats to separate slurry and wash salts from caked sulphur. Determines alkalinity of absorbing solution, by conducting titration tests. Adds soda ash or arsenic to adjust to specifications. Observes meters and gauges to control temperature of solution. Punches dirt from holes in absorber tower, using bar. Records production data in logbook. May operate furnace to burn foul or impure gas removed during purification process.

8163-128 ACIDULATION PLANT TENDER(animal & veg. oil) **DPT:665**
GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Tends acidulation tanks that separate oil from fish liquor, fats, tallows, or refinery sludge: Turns valves to fill ingredient tanks with alkali and specified amounts of sulphuric acid. Starts agitator that mixes ingredients. Tends mechanical separators. Starts pumps or opens drain valve to transfer separated material into storage tanks. Oversees activities of centrifuge and filter operators.

8163-130 NITROGLYCERINE SEPARATOR(explosives) **DPT:662**
GED: 3 SVP: 4 EC: I 6 7 PA: L 4 5 6 7

Operates equipment such as gravity separator and wash tanks to separate and recover nitroglycerine, preparatory to processing into explosives: Turns valves and operates controls to charge wash tank with specified quantity of soda and water in preparation for nitroglycerine. Directs other worker to transfer mixture of spent acids and nitroglycerine from batch nitrator to separator. Removes spilled mixture from floor, using mop. Allows mixture to settle in separator for specified time so that nitroglycerine collects and floats on top of acids. Observes mixture through tank sight glass to confirm that separation has occurred. Turns petcock to drain acids into trough leading to spent acid storage area. Observes liquid flowing from spigot to detect colour change that indicates nitroglycerine is flowing, and directs flow of nitroglycerine into wash tank. Operates controls to agitate and wash nitroglycerine for specified time. Monitors tank thermometer to detect heat accumulation that could cause explosion, and is prepared to operate controls to dump tank contents into emergency tank if

explosion appears imminent. Confers with associate worker by telephone, to obtain clearance, and operates pump to transfer washed nitroglycerine into neutralizer. Cleans tanks and troughs at end of shift, using hose and soda solution. Records shift production data and equipment performance in logbook.

May tend equipment to transfer glycerine and acid to nitrator and neutralize spent acids from separator and be designated accordingly, Glycerine and Acid Man

8163-134 ION-EXCHANGE OPERATOR(non-ferrous metal) **DPT:682**
GED: 3 SVP: 4 EC: I 4 6 7 PA: L 4

Operates continuous flow process to recover uranium from solution, through ion exchange process: Turns valves and operates pumps to fill ion exchangers with synthetic resins that act as uranium collectors. Activates system that automatically controls flow of uranium sulphate slimes and waste materials into tanks where uranium is deposited on surface of collectors through ion exchange process. Monitors automatic system that drains exchangers after specified period of time, flushes out slime residue, and refills exchangers with nitric acid solution to dissolve uranium from surface of collectors. Obtains samples of solutions at specified stages of processing and conducts pH and titration tests, using laboratory equipment. Patrols processing area to inspect operating equipment and reports defects to supervisor. Maintains shift log of production data.

8163-138 PLASTICS-STRAINER OPERATOR(plastic prod.) **DPT:682**
extruder-strainer operator.
GED: 3 SVP: 4 EC: I PA: M 4 7

Operates machines such as roller mill and filter extruder to remove foreign matter from plastics material: Operates roller mill to knead, mix, and blend plastic materials to specified consistency. Adjusts machine knives against mill roll to cut continuous strip as plastic dough emerges from mill. Selects and installs specified screen pack assemblies and die heads in extruder, using hand tools. Adjusts controls of extruder screw feed, according to pressure gauge reading. Feeds strip of plastic dough from roller mill into hopper of extruder strainer. Operates switches to start extruder that forces plastic dough through screen pack assemblies and discharges strained material onto calendar rollers. Replaces worn extruder screen packs and cleans die heads and cylinder, using hand tools, brushes, scraper and solvent. Maintains logbook of shift production and equipment performance.

8163-142 PURIFICATION OPERATOR(chem., n.e.c.) **DPT:682**
GED: 3 SVP: 4 EC: I 7 PA: L 4

Controls gas scrubbers and related equipment to remove impurities from hydrogen made from natural gas: Observes temperature, flow, and pressure gauges, and moves controls to effect operating equilibrium in equipment, according to plant procedures and correlation of instrument readings. Reads instruments to determine efficiency of gas scrubbing fluid. Turns valves to maintain solvent at specified strength, temperature, and volume in scrubber. Operates solvent reclaimer equipment that recovers and refines solvent for re-use in system. Takes corrective action when abnormal conditions occur, such as loss of power, air, water, steam, gas or solvent, according to plant procedures. Patrols processing equipment to detect abnormal conditions. Records gauge readings, results of laboratory sample analysis, and equipment performance in shift logbook. May operate gas-scrubbing and related equipment to remove impurities from air to be used in the production of oxygen, nitrogen and argon.

8163-146 RECOVERY MAN(soap) **DPT:682**
GED: 3 SVP: 4 EC: I 3 4 6 7 PA: M 4

Operates equipment such as scrubbing tower and wash tanks that recover soap or detergent dusts from spray-tower exhaust system: Starts fan that draws air and accumulated dust from spray-tower exhaust system into scrubbing tower. Operates steam pump that wets dust to convert it into heavy droplets that flow down baffle plates to bottom of tower. Controls pumps to process light slurry through heating coils to produce slurry of specified consistency. Turns valves to transfer recovered slurry into wash tank that removes contaminants.

Operates pumps to pump washed slurry through screen unit and scale tank into crutcher. Cleans piping, tanks, valves, screens and scrubbing tower, using steam hose and hand tools. Records shift production data and equipment performance in logbook. May operate crutcher to mix specified quantities and types of liquid, powder and paste ingredients, to form slurry used for subsequent soap production.

8163-150 SETTLER-FILTERER(chem., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I 6 7 PA: M 4 7

Controls equipment such as tanks, filters and pumps to remove sludge from titanium liquor used in production of titanium dioxide pigments: Starts pumps to transfer specified quantity of titanium liquor from storage tank into settling tank. Turns valves to admit metered quantities of chemicals into mixing tank. Adds specified quantity of glue crystals, manually. Operates mixing tank agitator for prescribed period of time. Starts pumps to transfer specified quantity of mixed reagent from mixing tank into settling tank. Controls state of settling, using gauged dipstick, and transfers top layer into holding tank, using vacuum device. Opens valve to drain remaining sludge into sludge-holding tank. Pumps sludge through rotary filter. Obtains sludge samples and performs specific gravity tests, using hydrometer. Maintains rotary filters, mixing and settling tanks in accordance with operational standards. Records production data in shift logbook.

8163-154 VISCOSE FILTERMAN(chem., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I 7 PA: L 4 7

Controls equipment that filters, transfers, ages, and removes bubbles from viscose fluid used in production of cellulose film or synthetic staple fibre: Turns valves and operates pumps to transfer viscose from blending station through filter presses to remove impurities. Observes filtering cycle and transfers viscose to vacuum tanks to remove air bubbles from fluid. Monitors gauges and adjusts controls to maintain specified incubation temperature, fluid pressure, and feed rate in equipment and associated process lines. Controls tanks that age viscose for specified time to prepare for transfer to synthetic fibre or film casting units. Records production data such as aging time, viscose output and gauge readings in shift logbook. Reports processing equipment defects to maintenance for rectification.

8163-155 FILTER-PRESS TENDER(any ind.) DPT:685
filter-press man.
GED: 3 SVP: 3 EC: I 4 PA: M 4

Tends filter presses that remove sediment, impurities and insoluble materials from liquid concentrations and compounds, such as slurries, chemical solutions, liquors and sugar: Covers filter plates with filtering medium, such as cloth, canvas or paper. Closes press, causing plates to come together, forming seal. Dumps filtering aids, such as diatomaceous earth or sawdust, into mixing tank with liquid to be filtered, and starts agitator. Pumps liquid or slurry through presses. Stops pumps when specified pressure is indicated on gauges or when filtering cycle is completed. Examines filtrate, and draws samples for laboratory analysis. Cleans filtered impurities from frames, screens, and filters, using water, steam, or compressed air. Opens filter press, dislodges solid materials from between frames, and replaces filtering medium. May tend closed system press. May be designated according to type of press operated or by product filtered; for example, Gold-Precipitate Filterer(non-ferrous metal) Pigment Filterer(chem., n.e.c.) Plate-and-Frame Operator(any ind.) Resin Filterer(paint & varn.) Salt Filterman(mining & quarrying) Sludge Filterman(any ind.) Varnish Filterer(paint & varn.)

8163-156 WAX BLEACHER(misc. prod. fab., n.e.c.) DPT:685
GED: 3 SVP: 3 EC: I PA: M 3 4

Tends vats and filter presses that bleach wax: Dumps wax into heated vats, and sets thermostat to prescribed temperature, to liquefy wax. Adds water to liquid wax and boils mixture for specified period to dissolve sugar. Packs granulated charcoal on sides of filter press and starts pump to circulate molten wax through press. Stops pump after specified time, and takes sample

for laboratory analysis. Turns valves or starts pumps to transfer wax from press to tanks. Attaches hose to tank and fills trays with molten wax for storage. Records types and quantities of wax used.

8163-158 BRINEMAN(chem., n.e.c.) DPT:665
GED: 2 SVP: 4 EC: B 7 PA: L 4 7

Tends tanks, filters and related equipment to produce brine solution for use in electrolytic cells: Pumps water through salt beds to produce mixture of specified salinity. Turns valves to admit brine and specified quantities of liquid chemicals such as caustic soda, acid, or lime into mixing tank to produce electrolyte to specifications. Pumps solution to settling tank to settle out impurities, and through sand-bed filters for final clarification. Obtains sample of electrolyte for laboratory analysis or tests density, salinity, and acidity, using hydrometer, salinometer, and pH meter. Turns valves to transfer electrolyte to electrolytic cells. Maintains liaison with caustic or chlorine plants to adjust chemical composition of electrolyte or adjust quantity supplied to tanks and cells. May operate filters and related equipment to refine potash from brine and be designated accordingly. Brineman, Potash

8163-162 NAPHTHALENE TENDER(petrol. & coal prod.) DPT:665
GED: 2 SVP: 4 EC: I 6 7 PA: M 3 4 7

Tends equipment to separate naphthalene from chemical drain oil used to wash coke-oven gas or tar distillate: Starts pumps to transfer drain oil from scrubbing tower to collecting tank where naphthalene crystallizes as oil cools. Opens drain valves or starts pumps to transfer oil from pans to storage tanks. Dumps naphthalene into centrifuge to remove remaining oil. Removes naphthalene from centrifuge and dumps or shovels it into steam-heated tank to melt and further purify it. Starts pumps to transfer liquid naphthalene into storage tanks or railroad tank cars. Reports equipment malfunction or irregular colour of product to foreman. May obtain sample from melting tank for laboratory analysis. May lubricate equipment and clean work area. May perform a portion of above duties and be designated accordingly; for example, Centrifugal-Drier Tender Naphthalene Clarifier

8163-168 STRAINER TENDER(rubber) DPT:665
GED: 2 SVP: 3 EC: I PA: M 4 7

Tends machine that strains metal particles and other foreign material from scrap rubber: Starts conveyors, opens chute, or shovels scrap rubber into hopper of strainer. Starts machine that forces scrap rubber through strainer screen. Regulates speed of machine and conveyors to prevent jamming. Discharges strained scrap rubber into conveyors or hand trucks for transfer to refining mills. Opens water valves to prevent overheating of machine and scorching of rubber. Inspects colour and appearance of strained rubber to ensure that foreign material is removed. Replaces clogged and worn strainer screens, using hand tools. Signals drying and milling department workers to maintain specified flow of scrap rubber through strainers. May tend magnetic device to remove ferrous metal from rubber. May fill containers with screened rubber.

8163-170 CHILLER TENDER(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 4 7 PA: L 4

Tends chiller and centrifugal drier to crystallize caustic soda in solution and to remove liquid from crystallized product for subsequent salt recovery: Turns valves and operates pumps to transfer caustic soda solution and water into dilution tank. Obtains sample and conducts specific gravity test, using hydrometer. Turns valves and operates pumps to pump solution through refrigerating unit and into chiller. Adjusts controls to regulate temperature and crystallization of slurry. Turns valves to regulate slurry output feed into centrifugal drier. Tends centrifugal drier to reduce liquid component of slurry for final evaporation and salt recovery. Inspects processing equipment and reports defects to maintenance for rectification. Examines piping and equipment and flushes lines, using hose. Maintains log of production data.

8163-174 DEHYDRATING-PRESS TENDER(explosives) DPT:685

GED: 2 SVP: 3 EC: I 6 PA: M 4

Tends press that removes water from nitrocellulose used in manufacturing propellant powder:

Pulls rope to dump specified amount of nitrocellulose into bottom cylinder of dehydrating press. Opens valve to force plunger to bottom of cylinder. Turns valve and operates pump to pump alcohol into lower cylinder and through wet nitrocellulose to displace water. Removes cakes of dehydrated nitrocellulose and places them on hand truck.

May verify weight of dehydrated nitrocellulose slabs, using platform scale. May clean equipment and work area.

8163-182 LIQUOR MAKER(chem., n.e.c.) DPT:685
leacher.

GED: 2 SVP: 3 EC: I PA: L 2 4

Tends conveyor system and recovery tanks to produce and regenerate liquor for pulp processing:

Starts conveyor and opens chute to charge recovery tanks with specified amount of black ash. Opens valves to fill recovery tanks with weak lime ash solution. Starts agitators to stir ingredients. Obtains samples of resultant solutions, and tests for concentration of lime ash, using hydrometer and reference charts. Starts pumps to circulate liquor through recovery tanks until test samples contain specified concentration of lime ash. Turns valves and operates pumps to transfer concentrated liquor into storage tanks. Pulls lever to open drain to remove insoluble charcoal residue from recovery tanks.

May clean empty tanks, using hose and scraper.

8163-186 OIL RECLAIMER(chem., n.e.c.) DPT:685

GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends equipment that purifies coolant oils from rolling mill machines:

Obtains samples from oil systems on rolling mill machines, periodically, for laboratory analysis. Opens valves and starts pumps to transfer oil to settling tanks to allow it to settle for specified time. Reclaims used oil by pumping through filtration unit or centrifuge into oil storage tank. Adds specified chemicals when laboratory tests indicate need for such action. Turns valves to add new oils to system when required. Inspects filters on filtration unit and replaces filter elements as required, using hand tools.

8163-190 PAN TENDER(chem., n.e.c.) DPT:685

GED: 2 SVP: 3 EC: I 3 4 PA: L 2 4 7

Tends equipment, such as settlers and thickeners to concentrate calcium chloride solutions to specifications:

Turns valves and operates pumps to start flow of calcium chloride solutions from storage tanks through series of pans. Opens valves to admit specified amounts of liquid chlorine into processing units. Patrols processing area to detect leaks and malfunctioning equipment. Obtains samples of products, and conducts titration and specific gravity tests, using standard techniques and equipment. Turns valves to drain and flush chemical residues from pans and lines, as directed by operator. Records temperature and pressure readings, and monitors gauges or recording charts to ensure safe operating conditions.

8163-194 SCREENER(explosives) DPT:685
dope-house man.

GED: 2 SVP: 3 EC: I 5 7 PA: H 4

Tends machine that separates particles of dry materials to sizes required for dynamite manufacturing by passing them through oscillating screens, and weighs them into specified quantities:

Bolts or clamps screens of specified mesh to machine frames, using hand tools. Shovels or pours dry materials into hoppers manually or by operating hoist. Positions buggies under screens to receive sifted material and removes when full. Weighs sifted material on platform scale and dumps into drums or trucks for processing by other workers. Records shift production data in logbook.

May lubricate machine and associated equipment.

8163-198 SCREENMAN, COKE(iron & steel; petrol. & coal prod.) DPT:685

screen tender, coke.

GED: 2 SVP: 3 EC: I 5 6 7 PA: L 2 4

Tends shaking screens that screen coke to specified size and conveyor that loads it into bins:

Starts conveyor and screens by pressing switches. Opens chutes to load or unload coke. Turns handwheel to adjust vibration rate of screens. Assists in changing vibration coils and in splicing belts, using hand tools. Cleans walks and floors, using broom and shovel. Lubricates screen mechanisms and conveyors using grease gun and oil can.

May patch screens. May operate car puller to spot railroad cars under bins and open chute to load railroad cars.

8163-206 WASHER AND DRIER(plastic prod.) DPT:685

GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends washing tank and rotary vacuum drier to wash and dry emulsion of polymerized plastic materials, such as acrylic resins, for processing into powder:

Pulls lever to transfer emulsion of polymerized plastic material from storage vessel into washing units. Opens valves to drain liquid from plastic materials. Moves controls to specified setting to rinse plastic materials. Operates switches to dump plastic materials onto conveyor that transfers them into rotary vacuum drier for specified time. Turns steam valves and adjusts controls to heat jacket of drier and to apply vacuum to drying chamber. Operates control switches to remove plastic materials from drier on completion of cycle and conveys materials to packaging department.

8163-210 SPINNERET PACK PREPARER(syn. fibres) DPT:684

GED: 2 SVP: 2 EC: I PA: M 4 7

Fills spinneret packs with measured amount of treated sand to filter impurities from molten nylon before extrusion into filaments:

Inspects orifices at base of pack for clogging or damage, using microscope. Weighs out, and pours, prescribed amounts of graded and treated sand into pack, according to type of nylon to be spun. Disassembles used packs, pours out sand, and cleans pack with soapy water or ultra-sonic cleaner and compressed air.

May assemble pack using torque wrench to tighten bolts. May inspect pack assembly units.

8163-214 NITROCELLULOSE FINISHER(explosives) DPT:585

GED: 2 SVP: 2 EC: I 5 6 PA: M 4

Performs any combination of the following duties to remove acids and impurities from nitrocellulose used in manufacturing explosives:

Turns valves to admit batch of nitrocellulose slurry to boiling tub. Operates controls to boil slurry for specified time. Tests solution to obtain specified degree of acidity, using titration test. Turns valves to transfer boiled nitrocellulose into stabilizing tub. Transfers nitrocellulose into beater, using special fork. Starts beater and opens valve to force slurry against blades. Starts pumps to transfer beaten slurry over sieves into poaching tubs. Obtains sample of batch for laboratory analysis. Turns valves to admit water and steam to boil mixture for specified time. Opens valves to decant water and adds fresh, hot water to clean contents. Adds specified weight of chalk. Adjusts valves to start charge circulating through lines to centrifugal wringer. Removes wringer charge to drum-filling hopper, using mechanical scraper units. Opens hopper door to fill drums with nitrocellulose. Weighs drums on platform scale and records weight. Installs covers and rolls drums on edge to storage area. Records production data in logbook.

May tend a particular piece of equipment and be designated accordingly; for example,

Beater Tender
Boiling-Tub Tender
Centrifugal-Wringer Tender
Poacher Tender

8163-216 NITROCELLULOSE SCREENER AND WEIGHER (explosives) DPT:685
GED: 2 SVP: 2 EC: I 6 PA: M 3 4 7

Tends mechanical screener that prepares nitrocellulose, for use in making explosives:
Rolls barrels of nitrocellulose from storage to screen area and removes lids, using wrench. Positions and adjusts non-sparking screen of specified mesh in mechanical screener, using hand tools. Starts screener and shovels nitrocellulose from drum onto screen, using wooden or aluminum scoop. Collects screened nitrocellulose in rubberized bags and weighs it into batches. Records weight of nitrocellulose in each bag on slip. Loads bags on handtruck and pushes to mix house. Verifies accuracy of scales daily, using standard weights. Cleans floor with broom, and washes floor and equipment daily, using mop and rags.

8163-218 CENTRIFUGE TENDER(soap) DPT:685
GED: 2 SVP: 2 EC: I PA: H 4

Tends centrifuge and related equipment to separate salt from glycerine-salt slurry for recovery action in soap manufacturing:
Turns valves and operates switches to blow glycerine-salt slurry batch into centrifuge tank, using air pressure. Sets timer and regulates control switch to start centrifuge slowly, and gradually increases speed. Turns valve to discharge glycerine liquid into recovery tank. Monitors controls that regulate temperature of water and lye rinses. Opens centrifuge at end of cycle and operates mechanical plow that forces salt from inner walls into recovery drums. May tend filter press and related equipment to filter and bleach chemically pure glycerine.

8163-222 INK PURIFIER(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 7 PA: L 4

Tends automatic equipment that grinds carbon black, for use in printing inks, and separates impurities from ground materials:
Turns valves and operates pump to transfer ink slurry from holding tank to colloid mill. Starts mill that grinds ink slurry for predetermined time to obtain specified fineness. Turns valve on mill tank to allow slurry to flow into centrifuge. Operates centrifuge for specified time to remove impurities from ink slurry. Turns valves and operates pump to transfer purified ink to storage tank. Opens valve to draw ink sample into sampling jar for laboratory analysis. Cleans residue from centrifuge periodically, using scraper.

8163-226 MERCURY RECOVERER(chem., n.e.c.) DPT:685
mercury washer.
GED: 2 SVP: 2 EC: I 6 7 PA: H 3 4

Tends equipment that recovers and purifies mercury used in electrolytic cells:
Sweeps, shovels, and dumps mercury-bearing material onto vibrating screen that separates mercury. Flushes screen with water, using hose, and drains off water into settling tank, to form sludge. Ladles contaminated mercury and sludge into reclaiming kettle and turns valves to admit acid and steam to separate foreign matter from mercury. Drains mercury into flask.
May break used cell anodes to salvage porcelain insulators and copper posts, using hammer. May tend concentrating table to remove mercury residue from scrap material for recovery. May weigh flasks of recovered mercury, for inventory records.

8163-234 SEPARATION-PRESS TENDER(chem., n.e.c.) DPT:685
panning and pressing operator.
GED: 2 SVP: 2 EC: I 2 PA: M 4

Tends hydraulic press that squeezes liquid oleic acid from solid fatty acid material to isolate solid stearic acid:
Fills pans with liquid material, in refrigerated room, by turning valves and using hose. Allows material to cool and solidify. Dumps chilled material from pans. Wraps jute cloths around each cake. Stacks wrapped cakes in basket of press and places metal plate between each layer. Operates control switch to raise basket against fixed platen and squeeze liquid oleic acid from cakes. Removes cakes from press and dumps cakes into steam heated tank to melt and further purify product. Pushes mobile tanks filled with oleic acid to staging area for processing by other workers.

8163-238 SODA DIALYZER(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 7 PA: L 4

Tends tanks in which caustic soda is recovered from solutions used in viscose manufacturing process:
Turns valves to admit impure soda solution to outside section of tank, and water to inside section, effecting absorption of soda into water by diffusion through cloth membrane separating the sections. Regulates discharge of resulting pure soda and intake of impure soda, according to level of solution in tank sections. Monitors tanks to observe flows and detect malfunctioning of equipment.

8163-242 FILTRATION HELPER(any ind.) DPT:687
GED: 2 SVP: 2 EC: I 4 PA: H 4

Helps filter operators in the separation of insoluble materials from liquid concentrations performing one or more of the following duties:
Observes filtering process to detect malfunctions, and makes adjustments as directed. Removes filter cakes (insoluble material) from plate or drum press, using scraper, and dumps them into hopper for further processing or disposal. Cleans plates, frames, drums and filter element, using water hose and hand scraper. Cleans sewer trough and work area. Takes samples for laboratory analysis and delivers them to laboratory. See also definition for term title, 02-160 HELPER (any ind.).

8163-299 OTHER FILTERING, STRAINING AND SEPARATING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

This group includes workers, not elsewhere classified, concerned with filtering, straining and separating chemicals and related materials.

8165-DISTILLING, SUBLIMING AND CARBONIZING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

This unit group includes occupations primarily concerned with operating and tending equipment which heats mixtures to vaporize and separate volatile substances; and with cooling, condensing and precipitating to produce refined substances; liquefying and distilling natural and industrial gases; and removing or obtaining gases, condensations or residues in stills, ovens or retorts. Occupations concerned with processing alcohols for human consumption are classified in Unit Group 8227, BEVERAGE PROCESSING OCCUPATIONS.

8165-110 PETROLEUM-PROCESS OPERATOR(petrol. & coal prod.) DPT:262
stillman; unit operator.
GED: 4 SVP: 7 EC: B 5 6 7 PA: L 2 3 4 5 6 7

Analyzes specifications and controls continuous operation of petroleum refining and processing units to produce products, such as gasoline, kerosene, fuel and lubricating oils and petrochemicals, by methods; such as, distillation, absorption, adsorption, extraction, thermal and catalytic cracking and reforming, polymerization, isomerization, fluid coking and alkylation:

Reads processing schedules, operating log sheets, test results of oil samples, and laboratory recommendations to determine changes in equipment controls required to produce specified quantity and quality of product. Moves and sets controls on control panels to adjust, maintain, and co-ordinate process variables. Moves controls to regulate valves, pumps, compressors and auxiliary equipment to direct flow of product. Reads temperature, pressure and flowmeters and

records readings. Determines malfunctioning units by observing control instruments, such as meters, gauges, or by automatic warning signals, such as lights and horns. Patrols and inspects equipment to determine location and nature of malfunction, and to verify safe and efficient operating conditions. Directs helper in drawing liquid samples for forwarding to laboratory for analysis.

May observe colours of product to detect deviations from standard. May clean interior of processing units by circulating chemicals and solvents through them. May control activities of several processing units operated simultaneously. May be designated according to process involved or unit operated; for example,

Absorption-Plant Operator

Cracking-Unit Operator

Purification Operator

Unit Operator, Polymerization

8165-114 ALKYLATION OPERATOR(petrol. & coal prod.)

DPT:362

GED: 4 SVP: 7 EC: B 6 7 PA: L 2 4 5 6 7

Controls automatic or semiautomatic alkylation unit and associated equipment to produce alkylates used in production of high octane gasoline:

Reads plant specifications to ascertain product, ingredients, and prescribed modifications to plant procedures. Starts automatic feed or moves controls to regulate feed of liquids or gases to equipment in specified timing or sequence. Sets controls of unit consisting of acid reactors, debutanizers, deisobutanizers, depropanizers and fractionating towers to produce specified product. Operates associated equipment; such as, reboilers, coolers, condensers, caustic and wash systems, according to specifications. Adjusts indicating and controlling devices to facilitate simultaneous analysis and control of process conditions. Observes gauges, signals and recording instruments, and turns valves or moves controls to regulate process variables. Directs activities of other workers performing duties, such as assisting in process control, drawing samples for laboratory analysis and maintaining log of production data. Reports defective equipment to maintenance crew and ensures conditions are safe before repair action begins.

8165-118 DISTILLATION OPERATOR(chem., n.e.c.)

DPT:362

GED: 4 SVP: 7 EC: I 3 7 PA: L 2 4 7

Controls pressurized batch or continuous stills and related equipment required to fractionate liquids having close volatilization points according to process specifications:

Reads process sheet to determine types and quantities of materials to be distilled, specified sequence of operations, and control setting required to attain specified distillates. Starts pumps and turns valves to admit liquids into stills. Monitors temperature and pressure gauges and moves controls to specified settings to attain volatilization rate consistent with operational procedures. Moves controls to maintain operating equilibrium in condensers and related equipment. Sets reflux rate for recycling maximum portion of distillate through system. Obtains samples of product for laboratory analysis or performs titration tests, using standard procedures and test equipment. Transfers distillates to receiving tanks, according to product colour or correlation of data from laboratory tests. Maintains shift log of operational data and equipment performance.

May be designated according to type of process or material processed; for example,

Batch-Still Operator

Benzol-Still Operator

Continuous-Still Operator

Mercaptans-Unit Operator

Synthetic-Textiles-Still Operator

8165-122 TREATER(petrol. & coal prod.)

DPT:362

GED: 4 SVP: 7 EC: B 5 6 7 PA: M 2 3 4 7

Controls continuous or batch treating equipment to process petroleum products, such as gasoline, kerosene, and lubricating oils with chemicals, solvents, steam, clay, and hydrogen to remove impurities and to improve colour, odour and stability according to specifications:

Moves and sets controls to admit products and treating agents to processing units in specified ratio, to direct flow of products through treating stages, such as mixing, precipitating and neutralizing, and to regulate temperatures, pressures and circulation rates of treating equipment. Observes temperature, pressure and flow meters, records

readings, and compiles operating records. Patrols and observes unit to detect malfunctions and leaks. Opens valves to obtain product samples and sends samples to laboratory for analysis. Recycles products or pumps them to storage tanks, according to test results and laboratory analysis. Opens valves to drain sludge from units.

May make minor repairs and lubricate equipment. May add fortifying chemicals to product.

8165-126 CONTROL MAN(petrol. & coal prod.)

DPT:362

GED: 3 SVP: 7 EC: I 6 PA: L 4 7

Operates control panel to regulate temperature, pressure, flow rates, and tank levels in petroleum and petrochemical processing, refining and treating units:

Observes gauges and instruments to verify specified process conditions. Operates switches, adjusts dials, turns valves, or moves levers on control panel to regulate and co-ordinate process variables, such as flow rates, temperatures, pressures and time cycles. Reports malfunctions to supervisor, using radio-telephone. Maintains shift log of production data and equipment performance. Removes charts from recording instruments for analysis by others and replaces charts. Lubricates apparatus behind control panel periodically, using specified methods and equipment.

May specialize in operation of a particular petroleum or petrochemical unit and be designated accordingly; for example,

Control Man, Cracking Unit

Control Man, Crude Unit

Control Man, Polymerization Unit

Control Man, Solvent-Treating Plant

8165-130 RECOVERY OPERATOR(chem., n.e.c.)

DPT:382

GED: 4 SVP: 6 EC: I 3 5 6 7 PA: L 2 4 7

Controls evaporators, furnaces, and dissolving tanks to recover sodium compounds from spent chemicals used in pulp manufacturing process:

Turns valves and starts pumps to admit black liquor (spent chemicals) into recovery unit. Adjusts temperature, pressure and associated controls on evaporator and furnace according to system specifications. Patrols recovery area to observe recording devices and indicators on panelboards, flow of chemicals through unit, colour of flame in furnace and level of solvent in tanks. Monitors evaporator operation for conformance to specifications of solid content of evaporated liquor. Pushes control buttons to add salt cake to evaporated liquor sprayed into furnace. Observes transfer of molten sodium from furnace into dissolving tanks where green liquor (dissolved sodium compounds) is recovered for subsequent pulp processing. Obtains samples of green liquor and performs specific gravity tests, using hydrometer. Maintains shift log of production data, gauge readings, test results and equipment performance.

May tend electrostatic precipitator on furnace exhaust system that recovers dust particles for recycling through furnace. May clean solidified smelt from furnace intake ports or transfer troughs or spouts, using steel bar.

8165-134 COKE-PLANT-BY-PRODUCTS OPERATOR(chem., n.e.c.)

DPT:382

GED: 3 SVP: 7 EC: B 3 6 7 PA: L 4 7

Controls equipment, such as washers, rectifiers, condensers, and mixing tanks arranged in series to recover by-products from coke plant tar oils:

Pumps prepared acidic solutions into system to dissolve by-products. Circulates materials by manipulating valves and switches, observing gauges and other instruments. Removes tarry compounds dissolved in by-product solution by steam rectification. Directs obtaining of product samples. Interprets results of laboratory tests and makes adjustments to control quality of product. Inspects equipment and changes charts. Cleans and lubricates equipment, and makes minor repairs. Records shift production data and prepares reports.

8165-138 COLUMN OPERATOR(chem., n.e.c.)

DPT:362

towerman.

GED: 3 SVP: 6 EC: I 5 7 PA: L 4 6 7

Controls group of carbonating towers to precipitate sodium bicarbonate crystals from ammoniated brine for subsequent processing into soda ash:

Maintains liaison with other operators who clean clogged towers to

supply ammoniated brine to remaining groups of carbonating towers. Turns valves and operates controls to admit ammoniated brine and carbon dioxide gas to groups of carbonating towers. Observes temperature, pressure and flowmeter gauges and adjusts controls to produce sodium bicarbonate crystals of specified size and concentration for subsequent processing into soda ash. Conducts titration tests to determine ammonia content of ammoniated brine, using laboratory equipment. Patrols processing area to detect malfunctioning equipment and reports abnormalities to maintenance personnel for corrective action. Maintains logbook to record production data, temperatures, pressures, flowmeter readings and test results.

8165-142 LIQUEFACTION-PLANT OPERATOR(chem., n.e.c.) DPT:362

GED: 3 SVP: 6 EC: I 5 6 7 PA: L 4 5 7

Controls compressors, blowers, condensers and evaporators to compress, refrigerate and liquefy ammonia, chlorine, or carbon dioxide gases:

Studies log sheet to ascertain demand and disposition of product and performance of plant equipment. Turns valves and adjusts controls to regulate temperatures, pressures, vacuum levels and flow rates in refrigerating systems and compressors to maintain prescribed flow of gas. Tests gas to ascertain deviations from specifications, using laboratory equipment. Observes gauges, meters, and level indicators, and adjusts controls to maintain related acid, oil or water systems. Directs workers engaged in filling cylinders or other containers, or transfers gas to storage. Records production and test data on log sheet.

May be designated according to type of gas liquefied; for example,
Ammonia-Gas Liquefier
Carbon-Dioxide-Gas Liquefier
Chlorine-Gas Liquefier

8165-146 GAS-PLANT OPERATOR(chem., n.e.c.) DPT:382

GED: 3 SVP: 6 EC: I 5 6 PA: L 4 7

Controls fractionating columns, compressors, purifying towers, heat exchangers and related equipment to extract nitrogen, oxygen, argon and other gases from air:

Turns valves or presses switches in specified sequence to control flow of air through series of units to filter, compress and liquefy air, and separate it into nitrogen, oxygen, argon, and other gases. Observes pressure, temperature and flow gauges to ensure equipment is operating according to specifications. Tests oxygen for purity and moisture content, using burette and hygrometer. Determines purity of nitrogen by processing gas sample through gas analysis apparatus. Adjusts equipment according to test results, to compensate for atmospheric conditions, or decreasing efficiency of column due to accumulation of frost. Opens valves to convey nitrogen through battery of driers to remove moisture. Turns valves to transfer liquid or gaseous oxygen or nitrogen through heat exchangers to dissipate accumulated heat generated by compression operations. Pumps gaseous or liquid products to storage tanks or cylinders. Records gauge readings and test results.

May clean and refill driers with desiccant, using hoist. May refill purification filters with water and solutions to maintain specified levels. May be designated according to type of gas extracted; for example,
Nitrogen-Plant Operator
Oxygen-Plant Operator

8165-150 DISTILLATION OPERATOR(petrol. & coal prod.) DPT:662

GED: 3 SVP: 6 EC: B 7 PA: L 4 7

Operates batch or continuous stills and related equipment to separate and extract intermediate products from coal tar compounds:

Operates valves to fill tank to specified level or adjusts feed valves to regulate flow of coal tar compounds through still units. Turns control valves and observes recording instruments to attain temperatures and pressures specified for distillation of products. Obtains samples of vapours for testing to determine the tank to which they should be routed. Maintains record of operational data, such as instrument readings, yield of products and equipment performance.

May operate distillation equipment to extract and refine ammonia from ammonia liquor and be designated accordingly,
Stillman, Ammonia

8165-154 GASMAN(oil & nat. gas) DPT:682

GED: 3 SVP: 6 EC: I 5 6 PA: L 4 7

Operates automatically controlled natural-gas-treating unit in oilfield to render gas suitable for fuel and for pipeline transportation:

Turns valves to admit gas and specified chemicals into treating vessel, where moisture is absorbed and impurities removed. Sets controls of auxiliary equipment, such as pumps, heating coils and cooling tower. Reads temperature and pressure gauges, and adjusts controls to keep heat and pressure at level of maximum efficiency and within safe operating limits. Performs routine tests or delivers samples to laboratory to determine qualities of gas, such as BTU value, flame candlepower, and specific gravity, and proportions of elements, such as methane and propane. Drains samples of boiler water from treating unit for laboratory analysis. Adds specified chemicals to water to keep heating and cooling systems in working order.

May adjust or assist in repairing gas meters, governors, regulators and other control instruments, using hand tools.

8165-158 GLYCERINE-REFINERY OPERATOR(soap) DPT:682

GED: 3 SVP: 6 EC: I 3 6 7 PA: M 4 7

Operates batch still and related equipment to recover and refine glycerine from spent lye solution used in soap manufacturing:

Treats spent lye solutions by adding specified liquid and dry chemicals to precipitate residual soap stock. Pumps soap stock to holding tank. Tests lye solution, using laboratory equipment, and adds caustic soda to neutralize acidity. Pumps solution through filter press to holding tank. Turns valves to fill batch still to specified level. Operates still and related equipment, such as condensers, cooling tower and vacuum jet system to recover glycerine. Turns valves to transfer glycerine to bleaching tank. Adds lampblack and starts agitator. Pumps bleached glycerine through filter press to final storage tanks. Records operational data, such as product yield, gauge readings and equipment performance.

8165-162 LIGHT-OIL-EXTRACTOR OPERATOR(petrol. & coal prod.) DPT:682

wash-oil-pump operator.

GED: 3 SVP: 6 EC: I 6 7 PA: L 2 4 7

Operates equipment, such as pumps, absorption tower, still, heat exchanger and processing tanks to extract and recover light oil from coke-oven gas:

Turns valves and operates pumps to admit impure coke-oven gas and coal-tar wash-oil into absorption tower that extracts light oil from coke-oven gas by absorption into wash-oil. Monitors gauges and meters and adjusts controls to regulate input flow rates. Turns valves to transfer washed coke-oven gas to final purifying station and saturated wash-oil to light-oil stills. Adjusts controls to maintain specified temperatures and pressures in light-oil still. Turns valves and operates pumps to transfer isolated light-oil to benzol plant and residual wash-oil through heat exchangers for reuse in absorption tower. Patrols processing area to record instrument readings and detect defective equipment. Lubricates pumps, drains sludge from tanks, and performs minor repairs, using hand tools.

8165-164 PUMPMAN, COKE BY-PRODUCTS(petrol. & coal prod.) DPT:382

GED: 3 SVP: 5 EC: I 6 7 PA: L 4 7

Operates equipment to cool, condense and separate tar, ammonium sulphate and light oils from coke-oven gas, and pump separated substances to specified locations:

Turns valves to transfer materials from collecting mains through cooler, scrubbers and decanter. Starts pumps, reads gauges and thermometers, and adjusts valves to regulate temperatures, pressures and rate of flow of gas, tar, ammonia liquor, light oils and water. Observes flow of tars from decanter, and manually adjusts seal to alter level of interface between tar and liquor and regulate liquor settling time. Pumps gas to next process, tar to storage tanks and liquor to collecting mains or to light-oil storage tank. Records temperature, pressures, and amount of tar and liquor pumped. Turns valves to bypass equipment requiring repair or cleaning. Flushes interior of coils with hot ammonia liquor to remove tar.

May adjust and lubricate floats, valves, and other equipment using

hand tools and lubricating equipment. May collect samples periodically and perform standard tests, using beakers, graduates and hydrometer.

8165-166 BATCH-STILL OPERATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 5 7 PA: L 4 7

Operates batch stills to separate liquids having divergent volatilization temperatures:

Turns valves and starts pumps to charge stills with liquids to desired level. Regulates controls on instrument panel to maintain specified temperatures and pressures throughout distillation cycle and to control condensation of products. Obtains samples of distillate for laboratory analysis or performs titration tests, using standard procedure and equipment. Observes colour of distillate to determine when process is completed. Records operating data, such as weight, yield of products, gauge readings and number of batches processed.

May operate distillation equipment to refine crude wood turpentine, or operate hydrogen-fluoride stills and related equipment to produce aluminum fluoride, and be designated accordingly; for example, Hydrogen-Fluoride-Still Operator
Turpentine Distiller

8165-170 BURNER OPERATOR(petrol. & coal prod.) DPT:682
fireman.
GED: 3 SVP: 5 EC: B 5 6 7 PA: M 2 4 7

Controls operation of burners to maintain temperature in furnaces of petroleum processing units according to specifications:

Starts furnace by pressing control button. Regulates temperature by turning steam valves and operating switches to increase or decrease flow of fuel to burner and to still, according to processing schedule. Reads temperature, pressure and flow gauges to verify operating conditions of unit, and records readings. Observes distribution, colour of flame and combustion conditions. Regulates air and oil flows by opening valves to correct combustion conditions and flame impingements. Reports any irregularities in operating conditions to superiors. May place burner on automatic control by turning switches. May examine walls and tubes of furnace to detect overheating. May prepare daily production control reports to show consumption of fuel oil.

8165-174 CELL OPERATOR(chem., n.e.c.) DPT:662
GED: 3 SVP: 5 EC: I 3 4 6 7 PA: L 4 7

Controls electrolytic cells and auxiliary equipment to produce caustic soda, chlorine or hydrogen from brine solution:

Regulates brine and water flow according to current input and strength of electrolyte. Observes flow through sight glasses, reads gauges, chart recorders and manometers, and moves controls to regulate mercury level, cell pressure, current capacity and to maintain temperature within operating limits. Turns valves and starts pumps to obtain specified back pressure on hydrogen, and vacuum on chlorine. Controls auxiliary equipment such as mercury condenser, hydrogen scrubber, water sprayers, compressors and driers to purify, recover or further process caustic soda, chlorine or hydrogen. Monitors cell-room operations to detect malfunctioning equipment that could result in fire or explosion due to presence of hydrogen gas. Analyzes samples of chlorine gas, using gas-analysis equipment. Obtains samples of brine solution to conduct pH or specific gravity tests. Records shift production and operational data such as amperage, voltage, temperatures and pressures used, to determine need for cell maintenance.

May be designated according to type of product produced; for example, Caustic-Cell Operator
Chlorine-Plant Operator

8165-178 DISSOLVER PRECIPITATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 5 7 PA: L 4 7

Controls equipment that dissolves and precipitates chemicals from chemical solutions used in production of petrochemical or synthetic textile products:

Pumps chemical solutions through premeasuring, dissolving and precipitating tanks. Observes thermometers and turns valves to maintain temperatures in tanks within specified limits. Starts tank agitators to mix solutions for prescribed time. Tests acidity and specific

gravity of solutions, using titration test equipment and hydrometer. Observes flowmeters and turns valves to regulate flow of ingredients through tanks to alter concentration and produce product to specified standard. Pumps or drains remaining solutions from precipitate and turns valves to transfer product for further processing, shipment, or storage.

May tend blending tanks to blend chemical solutions, such as the ammoniation of acids required to produce a particular chemical product.

8165-182 PETROLEUM-PROCESS-OPERATOR
HELPER(petrol. & coal prod.) DPT:682
stillman helper.
GED: 3 SVP: 5 EC: B 5 6 7 PA: M 2 3 4 7

Helps operator to distill, process, and refine crude oil to produce products, such as gasoline, kerosene, fuel and lubricating oils:

Patrols towers, tanks and other areas and inspects equipment, such as heating and distilling units, pipelines and pumps to detect malfunctions and leaks. Reads flowmeters, temperature and pressure gauges and records readings. Reports operating condition of units to operator. Turns valves and operates switches as directed to regulate temperature, pressure and flow of product, and maintain specified levels of oil in tanks and towers. Draws samples of product from tanks and towers for laboratory analysis. Lubricates and cleans equipment. See also definition for term title, 02-160 HELPER (any ind.).

8165-186 SATURATOR MAN(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Operates equipment to produce ammonium sulphate from coke-oven gas:

Turns valves to admit sulphuric acid and ammoniated gas into saturator. Adjusts controls to regulate saturation of solution until crystalline ammonium sulphate forms. Obtains samples and conducts tests to determine acidity of solution and percentage of crystallization. Observes temperature and pressure gauges to ensure that process conditions conform to specified standards. Turns valves and starts pumps to discharge slurry onto drain table to settle out crystals and return strained liquor back into saturator. Records gauge readings and equipment performance in shift log.

May operate controls to reheat ammoniated gas before saturation. May tend centrifuge to dry ammonium sulphate crystals.

8165-190 ACID-PLANT OPERATOR(chem., n.e.c.) DPT:682
absorption operator.
GED: 3 SVP: 4 EC: I 7 PA: L 4 7

Controls equipment that absorbs gases and liquids into water or other solvents to produce acids:

Operates pumps, turns valves and observes flowmeters to control concentration, flow, temperature, and quantity of coolant, gas, liquid, and absorbing liquor through cooling and absorbing towers. Turns valves to regulate feed rate of solution produced and steam pressure to purge boilers and condensers to separate impurities and obtain product of designated strength and specific gravity. Obtains sample from tank and tests for specific gravity and acidity, using hydrometer and pH meter, or forwards sample to laboratory for analysis. Turns valves to admit solution to storage tanks or tank cars. Maintains log of instrument readings, test results and production.

May prepare equipment for repair by draining tanks and lines and locking out pumps and motors.

8165-194 FUEL-GAS TREATER(petrol. & coal prod.) DPT:682
GED: 3 SVP: 4 EC: I 6 7 PA: L 4 7

Controls treating plant, consisting of absorber towers, actifiers, heat exchangers, pumps and related equipment to remove unwanted components and render gas suitable for use as fuel:

Observes gauges and meters to ascertain operating conditions. Adjusts valves and controls to regulate flow of gas through processing equipment. Performs chemical tests on treating materials, using standard test apparatus. Monitors processing operations to detect hazardous conditions. Turns valves to regulate flow of gas to blast furnace.

May inspect and lubricate machines.

8165-198 HYDROGEN-PROCESS OPERATOR(chem., n.e.c.)
DPT:682

GED: 3 SVP: 4 EC: I 6 PA: M 4 7

Operates electrolytic cells, compressors and cooling apparatus to produce high-purity hydrogen by electrolysis of water:

Fills electrolytic cells with distilled water, using hose, and initiates and controls production of gases by regulating electric current at control panels. Observes gauges on hydrogen storage tanks and opens valve to relieve excessive pressure. Compares volume of gas sample from system, with volume remaining after combustion of oxygen, by performing standard test to determine percentage of oxygen in the hydrogen side of the system. Observes gauges indicating temperature, pressure and level of electrolytic cell. Regulates power to cells by adjusting arc and mechanical rectifiers to maintain energy and decomposing efficiency of electrolytic cells. Observes operation of cells, compressors, cooling apparatus and drier equipment to ensure that required conditions are maintained. Measures moisture content of hydrogen coming from drier, using hygrometer. Reactivates chemical drying agent, using electric heater and vacuum pump. Records test results.

8165-202 TAR-ACID EXTRACTOR(petrol. & coal prod.)
DPT:682

phenol-plant-extraction operator.

GED: 3 SVP: 4 EC: B 6 PA: L 2 4 7

Controls equipment, such as washers, extractors, acid pots and treating tanks to recover tar acids from coal-tar oils for subsequent distillation operations:

Operates pumps to circulate coal-tar oil through processing equipment. Turns valves to treat oil at various stages with caustics, carbon dioxide and steam, according to process charts and instrument readings. Obtains samples and performs simple tests to determine effectiveness of treatment, and carries other samples to laboratory for complex analysis and interpretation of results. Adjusts processing operations to control quality of product according to laboratory analysis. Patrols area to inspect equipment and reports defects to maintenance department. Maintains log of gauge readings, shift production and equipment performance.

8165-206 VACUUM-PAN OPERATOR(mining & quarrying)
DPT:682

GED: 3 SVP: 4 EC: I PA: L 2 4 7

Controls triple effect evaporator system and vacuum filter equipment to concentrate brine slurry, grow salt crystals and separate crystals from slurry:

Turns valves and operates switches to start equipment that admits steam, cooling water, gypsum and brine into evaporators. Starts rotating vacuum filter, turbine, and heating equipment that operates within specified limits. Observes level of brine through sight glasses to ensure evaporation effect and vacuum pressures are maintained. Obtains slurry samples and performs titration tests, using standard equipment. Compares test results with standards and adjusts evaporators to obtain desired crystallization growth. Starts pumps to remove slurry from evaporators and to spray slurry over vacuum filter screen. Monitors vacuum filter equipment and adjusts scraper blade that removes salt crystals for final processing. Flushes out evaporators to remove scale and salt residue and examines steam tubes and inside walls of evaporators to detect equipment deterioration. Maintains shift logbook of production data and equipment performance.

8165-210 TREATER HELPER(petrol. & coal prod.) DPT:685

GED: 3 SVP: 4 EC: B 5 6 7 PA: M 2 3 4 7

Helps to process petroleum products, such as gasoline, kerosene, oils and wax, with chemicals, solvents, steam, clay, and hydrogen to remove impurities:

Patrols equipment to examine pipelines and valves for leaks. Turns valves to draw off water and spent chemicals after treatment and separation. Prepares solutions in supply tanks according to specifications. Adds treating chemicals to product by turning valves. Regulates pumps to control circulation and concentration of solution and product through unit according to specifications. See also definition for term title, 02-160 HELPER (any ind.).

May gauge tanks with calibrated tape to determine volume of contents. May make chemical, specific gravity and colour tests of

product and treating solution to determine process conditions or draw samples for laboratory analysis.

8165-214 ALKYLATION TOWERMAN(petrol. & coal prod.)
DPT:685

GED: 3 SVP: 3 EC: B 6 7 PA: L 2 4 6 7

Tends automatic or semiautomatic alkylation unit and associated equipment to produce alkylates used in production of high octane gasoline:

Turns valves to feed liquid and gaseous materials, such as acids or petrochemicals, through refinery processing equipment or sets controls in specified sequence on control panel to start automatic feed. Maintains systems at specified temperature, pressure and vacuum levels according to process specifications. Monitors gauges, signals and recorders and receives direction from operator to make specific adjustments. Patrols processing equipment area to record operating data and inspect for leaks or hazards. Maintains shift log of gauge readings and production and equipment performance.

May draw samples of products at specified processing stages for laboratory analysis by others.

8165-218 BLEACHING-SOLUTION MAKER(chem., n.e.c.)
DPT:685

GED: 3 SVP: 3 EC: B 7 PA: H 4 7

Tends absorption towers and reaction drums to produce zinc hyposulphate solution used in bleaching wood pulp:

Turns valves and starts pumps to regulate flow of water and sulphur dioxide gas through absorption towers to produce dilute sulphurous acid. Controls flow of dilute acid and steam through stripper to strengthen sulphur dioxide gas for re-absorption into stronger acid. Turns valves to control rate of steam evaporation and flow of water through chiller to lower temperature of water used in absorption towers. Operates cyclone scrubber to remove sulphur dioxide from absorption tower exhaust gases. Opens acid valves and dumps bags of zinc into reaction drums. Starts drums rotating to produce solution of zinc hyposulphate. Turns valves and starts pumps to transfer bleaching solution to storage on completion of reaction. Performs standard titration analyses to determine strength of acid and bleaching solutions. Records production data on log sheet.

8165-222 DISTILLATION-OPERATOR HELPER(chem., n.e.c.)
DPT:685

GED: 3 SVP: 3 EC: I 3 7 PA: L 2 4 7

Helps to control distillation units and related equipment to separate volatile chemical compounds into specified products by performing any combination of the following duties:

Turns valves and starts pumps to admit petrochemical products into stills. Measures liquids in storage tanks, using gauging rod or special tape. Moves controls to start semiautomatic still auxiliaries; such as, heat exchangers, stripping columns, vaporizers, flash drums and condensers. Adjusts controls to maintain specified operating conditions of equipment, as directed. Patrols processing equipment to record temperature, pressure and flow indicator readings. Inspects pipes, tanks and associated equipment for leaks and reports findings to operator. Obtains samples for laboratory analysis. See also definition for term title, 02-160 HELPER (any ind.).

8165-226 ACETYLENE-PLANT ATTENDANT(chem., n.e.c.)
DPT:685

generator man.

GED: 2 SVP: 4 EC: I 5 6 7 PA: M 4 7

Tends generating equipment that processes calcium carbide crystals and water into acetylene gas:

Turns valves and reads gauges to control level of water in generator. Dumps specified quantity of calcium carbide crystals into hopper, using drum dumper or air hoist. Bolts cover on generator, using wrench, and activates generator. Opens hopper gate and starts vibrator that sifts crystals into generator. Tends compressor that compresses acetylene gas to specifications. Ascertains level of acidity or alkalinity of gas, using litmus paper. Maintains record of operational data in logbook.

May assist in unloading and storing carbide crystals, using hoist or hand truck. May fill cylinders with compressed gas. May test cylinders

and associated piping for leaks by brushing soap solution on valves and fittings.

8165-230 CELL-OPERATOR HELPER(chem., n.e.c.) DPT:685
GED: 2 SVP: 4 EC: I 3 4 6 7 PA: L 4 7

Helps cellman to operate electrolytic cells that produce chlorine, caustic soda or hydrogen by performing any combination of the following duties:

Pulls and positions cell current jumpers, connects temporary jumper arms to circuits and turns switches to remove cells from service. Disconnects brine, gas, and caustic lines to prepare cells for changing, using wrenches. Assists maintenance personnel in positioning cathodes and cell assemblies in place. Removes temporary connections to return cells to service. Turns valves to flush lines, adjust and maintain brine flows and levels, and switch flows from brine tanks to bypass lines. Obtains and tests samples of cell liquor, using standard test equipment and charts. Patrols banks of cells to record voltage, current and hydrostatic brine pressures or to detect defective lines and equipment. Replaces charts in recording instruments periodically. See also definition for term title, 02-160 HELPER (any ind.).

8165-232 LARRY-CAR OPERATOR(petrol. & coal prod.) DPT:663

larryman.

GED: 2 SVP: 3 EC: B 3 6 7 PA: M 4 7

Operates larry (electric charging-car) to charge coal into coke-ovens: Weighs empty larry on scale to obtain tare weight. Opens chutes of storage bin to dump specified weight of coal into hoppers on larry. Drives larry to ovens, along rails mounted over ovens and moves controls to position hoppers over open charging-holes. Pushes levers to drop thimbles (sleeves) into charging-holes and to open slides in hoppers. Pokes bar through opening in hopper to release coal from storage bin into car hopper or from car hopper into oven. Records oven number, battery date, mix of coal and shift. Signals other worker to level coal in oven.

8165-234 OPERATOR, DOOR MACHINE(petrol. & coal prod.) DPT:663
discharge-door man.

GED: 2 SVP: 3 EC: B 3 5 6 7 PA: M 3 4

Operates machine equipped with door-jack and coke-guide to remove doors from discharge end of coke ovens and guide discharged coke from oven to quenching car:

Drives machine along rails to designated oven. Moves levers to hook machine arm onto door and remove door from oven and to position coke-guide which guides discharging coke from oven into quenching car. Signals other worker, using horn, to discharge coke from oven. Cleans carbon and tars from doors and jamb, using hand chisel-bar, scraper, shovel and broom. Gathers residue with shovel and wheelbarrow and dumps it into hopper. Replaces door, using machine. Cleans door-machine, using steam-cleaning equipment.

8165-238 PUSHERMAN(petrol. & coal prod.) DPT:663
pusher operator.

GED: 2 SVP: 3 EC: B 3 6 7 PA: M 4 7

Operates pusher machine which runs on rails at base of coke ovens, to level coal and push hot coke from ovens:

Drives pusher to designated oven. Moves levers to hook door-arm to oven door and to remove door from oven and to position ram. Starts ram, at signal from worker on discharge side of oven, to push coke out of oven into quenching car. Withdraws ram and replaces door in oven. Moves levelling bar back and forth through opening near top of oven to level fresh charge of coal. Cleans tars and carbon from oven door and jamb, using chisel bar. Signals other worker to recharge oven. Cleans pusher machine, using steam hose, broom and shovel.

8165-240 CRYSTALLIZER TENDER(chem., n.e.c.; explosives) DPT:685

GED: 2 SVP: 3 EC: I 5 7 PA: L 2 4 7

Tends equipment to process chemical solutions into crystalline form by one of the following methods:

Turns valves and operates pumps to transfer specified amounts of

chemicals into crystallizer. Starts internal agitator and operates pumps to pump coolants into cooling coils of crystallizer. Reads thermometer, observes product, and turns coolant valve to regulate temperature and control rate of crystallization according to specifications. Opens valve to empty crystals into screw conveyor to transfer crystals to storage area. Turns valves and operates pumps to transfer specified amounts of chemicals into heated reservoir to boil liquor and evaporate liquid content. Moves lever that automatically dumps solidified residue into trays. Transfers trays of solids to grinding and crushing area, using hoist. Starts crystallizer that breaks solids into crystals of specified size. May tend equipment such as evaporator, prill tower, drier and coater to produce ammonium nitrate prills. May be designated according to material processed; for example, Alum Evaporator(chem., n.e.c.) Ammonium-Nitrate Crystallizer Ammonium-Nitrate Priller Cellulose-Acetate Pretreater(chem., n.e.c.)

8165-242 STILL TENDER(chem., n.e.c.) DPT:685
degreaser, steam distillation.

GED: 2 SVP: 3 EC: I 3 7 PA: M 3 4 7

Tends still to reclaim degreasing agents, such as alcohol and kerosene from leather tanning solution:

Pumps solution of agent and grease into container of still and opens valves to admit steam into still. Observes gauges and adjusts valves to keep temperature at specified level to vaporize solution. Sets automatic switches to pump reclaimed solvent from collector tank to outside storage tank. Cleans residue from still using scrapers, after removal of solvent.

May be designated according to solvent reclaimed.

8165-244 BATH-MIX-SOLVENT RECOVERER(chem., n.e.c.) DPT:685

GED: 2 SVP: 2 EC: I 3 5 6 7 PA: H 2 4

Tends still that purifies solvents used in coating cellulose film:

Removes plug and screws drain valves into steel drums, using wrench. Lifts drum onto drain rack, using hoist, and opens drain valve to dump contaminated solvents into still. Adjusts panel controls of still and turns steam valve to vaporize impurities and reclaim solvents. Turns valve to fill drums with reclaimed solvents. Transports drums of solvents to storage area, using hand truck.

May clean empty drums, prior to filling, using solvents and neutralizer.

8165-246 DISTILLATION-OPERATOR HELPER(petrol. & coal prod.) DPT:687

GED: 2 SVP: 2 EC: B 6 PA: M 4

Helps to control stills, compressors, and associated processing tanks to separate and extract intermediate products from coal tar compounds:

Turns valves and operates pumps to charge processing tanks with crude coal tar derivatives. Verifies liquid levels in tanks and equipment, using measuring rod or tape. Transports neutralizing agents, such as acids or alkalis to work area, using hand truck. Turns valves to prepare equipment for distillation process as directed by operator. Patrols processing area to detect leaks or hazards, to record instrument readings and take samples to laboratory for analysis by others. See also definition for term title, 02-160 HELPER (any ind.)

8165-299 OTHER DISTILLING, SUBLIMING AND CARBONIZING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

This group includes distilling, subliming and carbonizing chemical workers, not elsewhere classified; for example, those who operate equipment to stabilize chemical reactions in preparations of synthetic fibres; and assist in extraction of light oil from coke-oven gas. Typical examples of occupational titles covered by this residual group definition are:

Light-Oil Utility Man(petrol. & coal prod.)

Stabilizer Operator(chem., n.e.c.)

**8167-ROASTING, COOKING AND DRYING
OCCUPATIONS, CHEMICALS AND RELATED
MATERIALS**

This unit group includes occupations primarily concerned with operating and tending equipment which subjects chemicals and related materials to heat, pressure, air, vacuum or desiccants to liquefy, dry, char, purify, concentrate, polymerize, atomize, or change chemical composition. Activities include: operating ovens, rotary kilns or furnaces to roast, calcine or otherwise affect a chemical change; cooking materials in pressure cookers, open vats, pans or kettles; operating oven, chamber-room type, or batch-type drying installations to remove water or volatile liquid components; drying solutions by spraying or atomizing to produce powders; cracking and combining gases; and operating converters and evaporators to produce acid.

Roasters

8167-110 through 8167-190

8167-110 ROASTER, CHEMICAL(chem., n.e.c.) DPT:382
GED: 3 SVP: 6 EC: 1 7 PA: L 4

Controls rotary kiln and auxiliary equipment, such as driers, coolers and conveyors to calcine, or otherwise affect a chemical change in materials:

Starts automatic equipment to feed required materials through equipment units, such as hoppers, elevators, screens and heating vessels. Observes gauges, signals and recording instruments, turns valves and moves controls to regulate temperature, pressure and flow of steam or coolant and chemical constituents through system to maintain process conditions. Observes consistency of product and periodically draws samples for laboratory tests to determine if reaction is proceeding according to standards. Stops heating process when cycle is completed and starts pump to transfer material from kiln to cooling equipment. Patrols area to inspect equipment. Keeps records of gauge readings, production and equipment malfunctions. Cleans and makes minor repairs to units.

May perform screening, milling and blending operations. May be designated according to type of chemical change affected; for example, Calciner

8167-114 THERMAL-ACID-EQUIPMENT OPERATOR(chem., n.e.c.) DPT:662
GED: 3 SVP: 6 EC: B 7 PA: L 2 4 5 6 7

Operates thermal acid plant equipment such as burner, heat exchanger, cooling towers, reboiler unit and scrubber system to convert elemental phosphorus into high grade phosphoric acid and to purify processed hydrochloric acid:

Directs activities of tender who unloads feedstocks such as hydrochloric acid, phosphorous and salt from rail cars and trucks and loads phosphoric acid into storage tanks or applicable vehicles. Turns valves and regulates controls of burner and associated equipment required to process phosphorous to produce phosphoric acid according to specifications. Operates salt reactor to purify phosphoric acid, reboiler unit to purify processed hydrochloric acid, and scrubber system to scrub contaminants from exhaust gases. Performs oxygen tests on exhaust stock gas samples and specific gravity and acidity or alkalinity tests on processing samples, using laboratory equipment. Monitors instrument control panel to observe plant operations. Patrols processing area to inspect equipment and performs minor repairs, using hand tools. Records operational data, production figures and equipment performance in shift logbook.

8167-118 RECOVERY-PLANT OPERATOR(chem., n.e.c.) DPT:662
boiler operator; fireman, recovery.
GED: 3 SVP: 6 EC: 1 PA: M 4 5 6

Controls furnace in which condensed black liquor is burned to black

ash for use in recovering sodium compounds:

Turns rheostat to adjust mechanism in mixing tank to feed specified quantities of salt cake into black liquor. Turns valves and air intake ports to regulate spray and density of liquor, and air distribution into furnace, according to combustion charts, to ensure complete combustion of organic matter. Opens furnace port allowing ash to flow directly into dissolving tank to form green liquor. Presses switch to start motor to pump liquor into settling or storage tank. Turns valves to channel steam generated by furnace boiler through liquor evaporators, or into main steam line for further use. Cleans and scrapes residue from liquor pipes and interior of furnace, using scraper and steam.

8167-122 CARBON-BLACK-FURNACE OPERATOR(petrol. & coal prod.) DPT:362
plant operator, furnace process.
GED: 3 SVP: 5 EC: 1 PA: L 4 5 6 7

Controls panel to operate semiautomatic furnaces and auxiliary equipment to produce carbon black through partial combustion of crude oil:

Signals crew, using loudspeaker system to start and maintain operation of furnaces and auxiliary equipment; such as, quenchers, precipitators, filters, pumps, compressors and conveyors. Observes instruments on central control panel such as, pyrometers, recording meters and other gauges to ensure that process conditions are maintained, and records instrument readings in operating log. Sets switches and knobs on control panel to regulate temperature, pressure and flow of air and fuel in reactors, and turns knobs to transfer accumulated carbon black from furnace through auxiliary units to produce specified type and grade of carbon black. Reports defective equipment to supervisor.

May tour plant area to ascertain that equipment is operating as indicated on central control panel.

8167-126 OVEN-CONTROL MAN, ELECTRODES(electric. equip.) DPT:682
GED: 3 SVP: 5 EC: 1 5 PA: L 4

Controls continuous-feed gas ovens to harden coated electric welding rods and remove moisture content from carbon electrodes:

Turns controls to light burners, opens gas valves and starts blowers and conveyor lines. Observes gauges and graphic charts, and adjusts controls to maintain specified conveyor speed, heat and humidity in each baking zone. Measures orifice of coating nozzle on extrusion head, using micrometer or observes coated welding rod to detect die wear or coating flaws and reports to supervisor.

May inspect and test finished welding rods, using arc-welding equipment. May keep production and quality control records. May calibrate coating dies, using honing and polishing tools.

8167-130 LIME-KILN OPERATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Controls panelboard to operate oil fired kilns and auxiliary equipment such as lime-mud filters, gas scrubbers, and conveyors, to recover lime from lime sludge:

Observes gauges and temperature charts on panel to detect variations in kiln temperature, amount of sludge in kiln, percentage of oxygen in kiln atmosphere, and rate that combustible gases are exhausted from kiln. Turns rheostats to regulate amount of sludge fed into kiln according to kiln capacity. Regulates dampers and fuel flow to maintain kiln at specified temperature. Adjusts controls to regulate intake fans according to percent of oxygen in kiln and exhaust fans according to rate that sludge decomposes into quicklime and carbon dioxide. Starts conveyors to move quicklime from kiln to hopper of slaking machine or storage area. Tends scrubbers and filters that remove cooking liquor from sludge before it is burned. Maintains operating records.

8167-134 HEATER, COKE OVENS(petrol. & coal prod.) DPT:362
GED: 3 SVP: 4 EC: B 3 6 7 PA: M 4 7

Controls, cleans and repairs ovens that produce coke:

Removes flue caps, using hook, and determines temperature in flue, and condition of nozzles by observing colour of flame and by using optical pyrometer. Reads gauges and turns valves to regulate flow of fuel gas and air, and maintain specified temperatures in flues.

Observes gauges and adjusts weights on governor to maintain specified gas pressure in collecting main. Cleans plugged gas nozzles, using poker. Inspects air flow and gas reversing mechanisms and adjusts or repairs equipment, using hand tools. Inspects finished coke as it is pushed from oven, visually, or with pyrometers, for temperature and quality, and adjusts temperature of oven accordingly. Prepares daily reports of gauge and pyrometer readings, recording changes in pressure or temperature. Repairs ovens, using hand tools, and refractory-clay spray guns. Directs activities of 8167-158 HEATER HELPER, COKE OVENS (petrol. & coal prod.).

8167-138 RING-FURNACE OPERATOR(electric. equip.) DPT:662
electrode-furnace operator.
 GED: 3 SVP: 4 EC: I 3 7 PA: L 4 7

Operates oil-fired ring furnace to graphitize green carbon electrodes: Lights burner, adjusts oil and water valves, manifold damper, and head covers to regulate temperature in furnace. Observes gauges and records water and oil pressures at regular intervals. Measures flue and pit temperatures, using optical pyrometer, to ensure that process temperatures are being maintained. Inspects and maintains pumps, motors, blowers, gas scrubber system and pipelines. Signals helper to prepare alternate pits for furnace change over to maintain baking schedule.

May clean oil burner valves and water filters when required, using steam and solvent. May record operating data.

8167-142 ACID MAKER(chem., n.e.c.) DPT:682
 GED: 3 SVP: 4 EC: I 7 PA: L 4

Operates rotary or spray sulphur furnace and alkali absorption towers to make cooking acid for use in digesting woodpulp:

Observes pressure gauges and moves controls to regulate pressure in combustion chamber, speed of furnace rotation, and volume of liquid sulphur in furnace, to maintain specified temperature and acidity required to produce sulphur dioxide gas. Makes titration tests of acid produced. Adjusts valves to regulate flow of water or caustic solution and sulphur dioxide gas through alkali absorption towers, according to titration test results, to produce cooking acid of specified concentration. Starts pumps to run acid to storage tanks, through settling tanks or filters.

8167-146 CARBON-BLACK-FURNACE TENDER(petrol. & coal prod.) DPT:585
 GED: 3 SVP: 3 EC: I 3 5 7 PA: L 2 4

Tends semiautomatic furnaces and auxiliary equipment to produce carbon black by partial combustion of crude oil:

Starts and maintains operation of furnaces, and auxiliary equipment such as, quenchers, precipitators, filters, pumps, compressors and conveyors. Turns valves to regulate flow of water in quencher, feed rate of fuel and air, and movement of accumulated carbon black through equipment, as directed by operator. Observes gauges and meters to verify specified temperature, pressure and rates of flow of materials, and adjusts valves to maintain process conditions.

May record instrument readings in operating log. May open inspection ports and observe flow of product through conveyors to detect jamming.

8167-150 RING-FURNACE-OPERATOR HELPER(electric. equip.) DPT:664
furnace loader; packer, ring furnace.
 GED: 2 SVP: 3 EC: I 3 5 6 7 PA: H 2 3 4

Helps operator to graphitize green carbon electrodes performing any combination of the following duties:

Attaches crane cable to flue lids, exhaust manifold and brick side blocks of furnace and signals crane operator to lift them from fired pit and lower them into alternate pit. Shovels aside loose insulating mix, undermines crust of mix with pick, and breaks layer of hardened resistor mix to stifle and cool fire bed. Shovels resistor and insulating mixes into separate piles for reprocessing and reuse. Attaches crane cable to graphitized electrodes and guides them manually as they are removed from furnace bed. Operates conveyor and tripper, and positions chute to direct flow of resistor and insulating mixes into furnace pit. Levels, and tamps mixes, using shovel and rake and forms a trench along mix bed, using trench gauge, to receive electrodes.

Attaches cable to green electrodes and directs crane operator to stack electrodes on furnace bed. Fills space between electrodes and top of charge with additional resistor mix. See also definition for term title, 02-160 HELPER (any ind.).

May remove smaller electrodes by hand and stack them beside furnace.

8167-154 CALCINER TENDER(petrol. & coal prod.) DPT:665
 GED: 2 SVP: 3 EC: I 3 5 6 7 PA: L 4 6

Tends electro-thermic calciner that reduces ground coal or petroleum coke to powdered coke by driving off volatile matter preparatory to making graphitized electrodes:

Observes control panel indicators and turns switches, to lower electrodes into calciner, to open hydraulic feeder chute and fill calciner to top of electrodes, with coal or petroleum coke, and to turn on electrical current. Dumps additional quantities of coal or coke into calciner to keep it level with top of electrodes which are raised hydraulically until entire charge is heated to specified temperature. Directs operator of crane to move filled calciner for cooling and dumping.

8167-158 HEATER HELPER, COKE OVENS(petrol. & coal prod.) DPT:665
oven-heater helper.
 GED: 2 SVP: 3 EC: B 3 6 7 PA: M 4 5 6

Helps operator by regulating temperature of coke ovens and flow of air to flues, and by maintaining equipment:

Turns handwheel to open and close decarbonizing caps which admit air to flues to burn carbon from gas and air nozzles. Observes temperature and pressure gauges and notifies 8167-158 HEATER, COKE OVENS (petrol. & coal prod.) if pressure or temperature varies from specified limits. Cleans carbon from plugged nozzles, using poker, and replaces broken nozzles, using hand tools. Turns handwheel in emergency to operate automatic reversing machinery. Cleans and lubricates equipment, using grease gun. See also definition for term title, 02-160 HELPER (any ind.).

8167-162 ROTARY-FURNACE TENDER(chem., n.e.c.) DPT:665
roaster tender.

GED: 2 SVP: 3 EC: I 3 6 7 PA: L 4 5 7

Tends rotary furnace that roasts sulphur or other materials to liberate gases for use in processing chemical products, performing any combination of the following duties:

Dumps specified quantity of material such as zinc pellets or sulphur onto conveyor to feed rotary furnace. Starts rotation of furnace, monitors gauges and adjusts fuel valve to maintain specified temperature in furnace and ensure efficient roasting of materials. Turns valve and starts pumps, depressing button to direct flow of air, and water, through furnace and to transfer liquid sulphur and acid between equipment units, when roasting sulphur for use in production of sulfuric acid. Directs workers and engages in cleaning and topping furnace.

May adjust and repair heating controls on furnace using hand tools.

8167-166 THERMAL-ACID-EQUIPMENT-OPERATOR HELPER(chem., n.e.c.) DPT:585
 GED: 2 SVP: 3 EC: B 7 PA: M 2 4

Tends thermal acid plant equipment such as reboiler, scrubber, and cooler to assist operator in the conversion of elemental phosphorus into high grade phosphoric acid and to purify processed hydrochloric acid:

Operates pumps to load, unload, or transfer, feedstocks such as, hydrochloric acid, phosphorus and salt to or from storage tanks, cars or trucks as directed by operator. Patrols thermal acid plant processing equipment such as, reboiler, scrubber and cooler, to verify processing conditions and record instrument readings on record sheet. Draws samples of product at specified stages for analysis by laboratory personnel. Turns valves to transfer resultant phosphoric acid to specified storage tanks. Starts and stops water sprays in absorber, as directed, to control acid strength. Dismantles, cleans, and assembles process lines, as directed, using steam, regenerative chemicals and hand tools. See also definition for term title, 02-160 HELPER (any ind.).

- 8167-170 CHARCOAL BURNER, BEEHIVE KILN**(petrol. & coal prod.) DPT:685
charcoal burner.
 GED: 2 SVP: 3 EC: O PA: H 3 4 7

Tends series of beehive kilns to convert wood into charcoal by carbonization:

Places kindling in kiln manually, and starts fire, using burning log or oil soaked gunny sack. Seals top and door of kiln using cement and trowel or sand when specified heat is attained, to limit access of air and activate the carbonization process. Observes colour of smoke issuing through draft holes, opens and closes draft holes inserting bricks to maintain process conditions. Seals draft holes and cracks in kiln with cement to smother fire when carbonization is completed. May extinguish fire using water hose.

- 8167-174 RECOVERY-PLANT-OPERATOR HELPER**(chem., n.e.c.) DPT:685
fireman helper.
 GED: 2 SVP: 3 EC: I 3 5 6 PA: L 2 3 4

Helps operator to control furnace in which condensed black liquor is burned to black ash for use in recovering sodium compounds:

Turns valves to regulate flows of black liquor and air into drier to dry black liquor to specified concentration. Adjusts rheostat manually, as directed, to regulate mixing tank mechanism and feed salt cake into black liquor preparatory to burning. Turns valves to direct steam into evaporators and turns crank to rotate steam jets through boiler to blow out soot and sludge. Scrapes sludge from interior of furnace, to keep unit in good working condition, using scraper and rake. See also definition for term title, 02-160 HELPER (any ind.). May test moisture content of liquor using moisture meter.

- 8167-175 STANDPIPE MAN**(petrol. & coal prod.) DPT:685
dampier man; topman.
 GED: 2 SVP: 3 EC: O 3 5 6 7 PA: M 2 3 4

Tends equipment that regulates flow of byproduct gases in coke oven standpipes preparatory to discharging or charging oven:

Moves controls to regulate flow of gases to collecting main, to open standpipes and oven charging holes, clear oven and standpipe of gases, and control flow of ammonia liquor and steam during charging. Sweeps coal spillage into charging holes. Cleans tops of ovens, using broom and shovel. Cleans standpipe, nozzle and charging holes, using chisel, bar and drill. Pokes coal from hoppers on charging car, using bar.

May assist in changing standpipes and ascension elbows.

- 8167-178 LEAD-OXIDE MAKER**(chem., n.e.c.) DPT:685
red lead burner.
 GED: 2 SVP: 2 EC: I PA: M 4

Tends furnace that converts lead into lead oxide for use in products such as storage batteries and ceramics:

Observes gauges and adjusts controls to regulate fuel feed, and to maintain process temperatures in melting pot and furnace. Loads specified quantity of lead billets onto conveyor to feed melting pot, using hoist. Starts pump and furnace rotators to transfer molten lead from melting pot to furnace and to ensure uniform heating of materials. Turns switch to start furnace air-blast to activate oxidizing process and to pump lead-oxide to settling chambers. Takes samples of lead oxide and makes simple chemical tests.

- 8167-182 LIME-KILN-OPERATOR HELPER**(chem., n.e.c.) DPT:685
 GED: 2 SVP: 2 EC: B 3 5 PA: M 4

Helps operator to control operation of oil fired kilns and auxiliary equipment that recover lime from lime sludge, performing any combination of the following duties:

Starts and stops equipment, and turns valves as directed. Breaks lime into lumps, using steel bar. Prepares flocculating agent to be used in settling tanks. Dumps ingredients into mixing tank, and opens valves to admit flow of water and steam. Starts agitators to mix ingredients, observes thermometer and closes valves when specified temperature is attained. Starts pumps to transfer material from mixing to settling tanks. Draws samples of lime for laboratory analysis. Starts conveyor to transfer limerock from storage bins to production area or silos.

Measures amount of rock in silos using weighted measuring line. Keeps equipment and work area clean, using water or air hose. See also definition for term title, 02-160 HELPER (any ind.).

- 8167-186 CARBON-BLACK-FURNACE-OPERATOR HELPER**(petrol. & coal prod.) DPT:687
 GED: 2 SVP: 2 EC: I 3 5 7 PA: L 4

Helps operator to control semi-automatic furnaces and auxiliary equipment to produce carbon black by partial combustion of crude oil, performing any combination of the following duties:

Patrols carbon production and filter areas at regular intervals to inspect equipment and piping for malfunctions or leaks, and notifies control-room of unusual conditions. Observes product through sight glasses at various stages of drying process to detect malfunctions. Observes operation of discharge conveyors, clears clogging, using rod, and adjusts feed gates as required to maintain uniform flow of material. Fills and delivers sample bottles to laboratory for analysis. Weighs and labels containers. See also definition for term title, 01-160 HELPER (any ind.).

- 8167-190 OVEN LOADER**(non-metal min. prod., n.e.c.) DPT:687
heat curer.
 GED: 2 SVP: 2 EC: I 3 6 PA: M 3 4

Loads and unloads preheated oven that cures resinoid, rubber or shellac bonded abrasives:

Reads work order cards to arrange oven loads into groups of articles requiring similar temperature and heating time. Stacks or hangs articles on rack, manually or using hoist, and pushes rack into preheated oven. Removes rack from oven after specified time. Removes articles from rack, counts and records number of articles cured and packs them into boxes for further processing.

Cookers

8167-210 through 8167-250

- 8167-210 SOAP BOILER**(soap) DPT:362
 GED: 3 SVP: 6 EC: I 3 4 5 6 7 PA: M 2 4 5 7

Controls kettle to boil soap ingredients, such as; lye, salt, oils and tallow, to specified saponification level:

Opens, or directs workers to open valves that admit ingredients such as, oils or tallows in specified amounts to charge kettle. Weights, using scales, and dumps saponifying ingredients such as caustics into kettle. Opens steam valve to heat kettle to specified temperature. Observes temperature gauges and adjusts valve to maintain temperature within critical limits from initial to final boil, until saponification is complete. Adds brine, as process knowledge indicates, to separate glycerol from soap. Directs worker to open valve that transfers lye solution to tank preparatory to recovery of glycerol. Draws and tests samples of lye and soapstock for texture and colour, glycerol, free alkali and caustic soda contents, utilizing titration method. Adds caustics as required to neutralize free fatty acid. Dips hot trowel into soapstock and observes run-off of soapstock to evaluate quality. Adds water, brine or caustic, and reboils mixture as required. Signals workers to start pump and open valves to transfer soapstock to storage tanks. Engages and directs workers in cleaning equipment and work area using steam jet. May direct workers and control several kettles during production processes.

- 8167-214 POLYMERIZATION-KETTLE OPERATOR**(chem., n.e.c.) DPT:382
 GED: 3 SVP: 6 EC: I 6 PA: L 4

Controls reactor vessels to polymerize raw resin materials and solvents to produce compounds; such as, phenolic, acrylic or polyester resins, or polymer emulsions:

Pumps specified amount of raw material into calibrated tank or kettle according to formula and turns valve to transfer material into reactor kettle. Starts reactor agitators, and pumps reagents and catalysts into reactor. Starts circulation and vacuum pumps, observes gauges and adjusts valves to regulate flow of preheated or cooled fluid around jacket of reactor to maintain process temperature and pressure and regulate polymerization reaction. Tests viscosity, acidity and alkalinity of resins, using viscosimeter and gauge, to determine length of

polymerization time. Turns valves to discharge processed material from reactor into cooling tanks. Records processing time, pressure, temperature, and test results in log book and prepares daily reports on amounts of raw materials used and quantity of finished product stored. Transfers raw materials, such as, monomers, solvents or liquid propellants from tank trucks or railway tank cars to storage tanks, using flexible lines and vacuum pumps.

May dump specified compounds into polymerized resins to thicken product.

8167-218 VARNISH MAKER(paint & varn.) DPT:682
GED: 3 SVP: 6 EC: 1 PA: VH 3 4 7

Operates equipment to melt, cook and mix ingredients such as gum, oils, turpentine and naphtha to make varnish:

Weighs and dumps ingredients such as gum, glycerine or synthetic resins into heated agitator tank. Pours in oil such as linseed or soy bean using hoist to lift and empty drums. Observes temperature gauges and adjusts burner controls to regulate heat to cook mixture according to process formula. Starts pumps to transfer cooked varnish base and thinner into reducing tank. Starts agitators depressing button to mix ingredients for specified time. Draws and fills test tube with varnish and compares with standard sample to determine viscosity, colour and drying qualities. Pumps varnish through filter press that removes sediment, and to storage tanks when process is completed.

May be designated according to type of varnish made; for example,

Alkyd-Varnish Maker

Cold-Varnish Maker

Spirit-Varnish Maker

8167-222 AUTOCLAVE OPERATOR(chem., n.e.c.) DPT:582
GED: 3 SVP: 5 EC: 1 6 7 PA: M 4

Operates autoclaves, and auxiliary equipment to process solid and gaseous ingredients into chemical products, such as melamine, according to specifications:

Reads production schedule to determine product, ingredients to be used, temperature, pressure, and duration of process. Turns valves to release flow of dicyandiamide powder to blender heater to preheat powder. Transfers powder into scale hopper, turning valve. Weighs and dumps preheated dicyandiamide powder into autoclave. Starts pump and turns valves to admit metered gaseous ammonia into autoclave. Closes and seals autoclave head, using air wrench. Adjusts dials to regulate pressure and vent excessive pressure to atmosphere. Observes specified reaction time and turns valves to admit oil into autoclave to cool ingredients. Opens autoclave, turns switches to lower and start drilling rig to separate material preparatory to unloading. Connects conveyor system, and starts blowers and fans to transfer material to storage bin. Keeps operation records. Performs minor maintenance duties, such as replacing gaskets, dismantling and cleaning equipment, using hand tools.

8167-226 DIGESTER OPERATOR(chem., n.e.c.) DPT:582
GED: 3 SVP: 4 EC: 1 6 7 PA: L 4

Operates battery of digesters and auxiliary equipment in which titanium slag is treated with sulphuric acid and water to produce a liquor used in the production of titanium oxide pigments:

Turns valves, starts pumps and conveyors to transfer to digester vessels specified quantities of sulphuric acid from holding tanks, and titanium slag from weigh hopper. Opens valves to admit steam and air into digester to raise temperature and pressure. Starts scrubber system to remove acidic gases. Adds caustic acid as required. Observes temperature and pressure gauges and adjusts valves to regulate flow of air and steam to maintain process conditions. Opens valves to admit water into digester to dissolve material. Takes specific gravity tests at regular intervals, and draws samples for laboratory analysis. Starts pump to transfer liquor from digester into storage tanks. Keeps records for production control.

8167-230 PRECIPITATOR OPERATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: 1 PA: L 4

Controls precipitation tanks and auxiliary equipment to remove iron particles from liquor used in the production of titanium dioxide:

Observes control panel, and adjusts valves to transfer dioxide liquor from supply tank to precipitation tank, and to add specified quantity of nuclei to mixture. Observes temperature and pressure gauges, opens

and adjusts steam valves and air vent, and moves controls to regulate and maintain specified temperature and pressure. Boils liquor for specified period of time, and turns valves to shut off steam and add required quantity of quench-water, and starts agitators in tank. Opens valve to release liquor into coolers, and observes temperature gauge to ascertain end of cooling process. Transfers solution into feed tanks for storing. Draws samples at regular intervals for laboratory analysis.

8167-234 CADMIUM-LIQUOR MAKER(paint & varn.) DPT:685
GED: 2 SVP: 3 EC: 1 6 7 PA: H 4

Tends equipment that dilutes cadmium pellets in heated acid bath to produce cadmium sulphate:

Dumps barrels of cadmium pellets into water tank, and adds specified amounts of nitric and sulphuric acids. Turns valve to regulate flow of steam into coils and heat mixture to boiling point to produce cadmium liquor. Tests liquor solution to determine acid and impurity contents as per laboratory specifications. Starts pumps to transfer liquor solution from heating to purification tank to cleanse cadmium liquor and neutralize metallic impurities, and to transfer purified liquor to storage tanks. Maintains acid lines and equipment in good working condition using hand tools.

May tend furnace to melt cadmium preparatory to dumping into water tank.

8167-238 DEVULCANIZER TENDER(rubber) DPT:685
GED: 2 SVP: 3 EC: 1 6 7 PA: L 4

Tends machine that automatically processes ground scrap rubber with chemical compounds to produce reclaimed rubber:

Pulls levers to drop measured amount of scrap rubber into scale hopper. Pushes loaded hopper along monorail and pulls lever to dump contents into machine. Turns valves and observes gauges to pour specified quantities of materials; such as, oil, caustics, pigments and water onto scrap rubber in devulcanizer. Closes and bolts loading hatch to seal devulcanizer. Turns valves and observes gauges to maintain specified operating temperature and release steam pressure preparatory to unloading devulcanizer. Opens discharge valve allowing steam pressure to blow devulcanized rubber into holding tank.

May attach specified cycle charts to automatic timer. May record production data.

8167-242 KETTLE TENDER(chem., n.e.c.; soap) DPT:685
GED: 2 SVP: 3 EC: 1 6 7 PA: M 4

Tends heated kettles that boil and blend soap ingredients:

Opens valve to admit steam into kettle jacket preparatory to boiling soap ingredients. Weighs and dumps ingredients; such as, caustic potash, fat, sulphuric and hydrofluoric acids into kettles manually, or using hoist. Observes temperature gauges and rate of reaction of mixture and adjusts valves to regulate temperature and maintain process conditions. Starts helicoidal mixer to stir and blend ingredients as specified. Draws samples and delivers them to laboratory for analysis. Opens valve to drain solution from kettles into containers or storage tanks. Glues product identification labels on containers. Keeps work area and equipment clean, using steam and water hoses.

May keep production records. May patrol processing area to inspect equipment and report defects or potential hazards to foreman. May transfer materials to and from tank cars, using pumps and hoses. May be designated according to type of heating vessel used; for example, Twitchell Tender

8167-246 ASPHALT-HEATER TENDER(petrol. & coal prod.) DPT:685
still operator.
GED: 2 SVP: 2 EC: 1 3 6 7 PA: L 4

Controls equipment that heats asphalt to specified temperature and viscosity for use in manufacture of roofing materials:

Starts pumps to fill tanks with asphalt to desired level. Observes furnace gauges and dials, turns wheels and valves to regulate and maintain specified temperature, pressure and depth of asphalt in tanks. Starts discharge pumps and turns valves to direct flow of heated asphalt into plant, storage tanks or stills.

May operate fuel oil pumps to supply fuel oil to stills. May take samples of asphalt or tar to laboratory for tests. May keep records for production control.

8167-250 RECOVERY-VAT TENDER(plastic prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 3 4

Tends heated vats to re-treat defective transparent wrapping materials:

Lifts and carries bales of defective transparent material to recovery vat area. Dumps sheets of wrapping materials into vats manually. Adjusts controls such as, thermostat to regulate temperature of vats and heat solution according to process conditions. Turns valves to admit chemicals into vats or weighs specified quantity of chemicals, using scales and dumps chemicals manually into vats to treat materials.

Driers

8167-270 through 8167-294

8167-270 SOAPFLAKE-DRIER OPERATOR(soap) DPT:682
drier operator.
GED: 3 SVP: 4 EC: I 4 5 7 PA: L 2 4

Operates rollers and driers that convert viscous soap into flakes and removes excess moisture from flakes:

Turns valves and operates pumps to admit refrigerated water to chilling rollers and steam to heating rollers, to chill or heat particular rollers to process temperatures. Opens valves to allow viscous soap to flow from crutcher machine or storage tank into chamber equipped with opposed heating and chilling rollers. Operates pump to direct flow of soap between opposed rollers to spread soap into a thin film that solidifies and adheres to the chilling roll. Adjusts flaking knives that cut soap film from chilling roll to produce ribbons. Turns valves to admit steam to drying cylinders and oven jackets to heat driers to specified temperature. Starts conveyor to route soap ribbons into driers to remove excess moisture and break soap ribbons into flakes. Removes sample of dried flakes to test for moisture content using moisture testing apparatus, and records test results. Regulates valves to adjust temperature to complete drying cycle. Starts conveyor to discharge and route dried flakes from driers into storage bins.

May clean equipment using steam and air hose. May measure contents of storage tanks using dipstick.

8167-274 DRYHOUSE TENDER(explosives) DPT:585
GED: 2 SVP: 3 EC: B 6 PA: L 4

Tends dryhouse to dry priming mixtures or pyrotechnics:

Transports trays filled with explosive primers or pyrotechnics from loading room to steam heated dryhouse, using shockproof cart. Places trays into numbered bins. Observes gauges and adjusts valves to control temperature and humidity in dryhouse. Delivers dried priming mixtures or pyrotechnics to production or storage area using shockproof cart. Keeps perpetual inventory of stock, and records data, lot number, quantity and grade of stock delivered.

May clean working area according to safety regulations. May tend vacuum tank and pump to force-dry priming mixture to accelerate drying. May tend dryhouse to dry a particular type of mixture and be designated accordingly; for example, Primer-Dryhouse Man

8167-278 NITROCELLULOSE-DRIER TENDER (explosives) DPT:585
GED: 2 SVP: 3 EC: I 4 6 7 PA: M 4

Tends cotton linter drier and nitration finishing equipment including stabilizers, heaters and poachers used in the production of nitrocellulose:

Moves bales of cotton linters from storage area to drier, using electric hoist. Opens bales, using wire cutters, and feeds linters into drier, using shovel. Adjusts controls to regulate flow of hot air into oven and speed of conveyor to maintain process temperature and efficient drying. Tends centrifugal wringer to remove excess acid from dipper linter. Tends stabilizers and heaters to cut strands of nitrocotton into smaller segments. Starts agitators to pump nitrocotton into poaching tubes for removal of impurities. Starts hydraulic ram to fill and pack drums with nitrocotton and rolls drums to storage area manually. Rakes dried cotton linters into weigh cans, removes dust clusters and inadequately processed cotton. Slides cans onto scales manually and adds or removes linters to obtain specified weight preparatory to further processing. Keeps nitration and stabilization reports, and records number of cans filled, weight and number of bales of cotton linter used. Controls equipment to combine and process specified

amounts of acid and cellulose to produce nitrocellulose. Keeps wringer screens, acid filters and work area clean.

8167-282 SOLVENT-RECOVERY TENDER(explosives) DPT:665

drier operator.

GED: 2 SVP: 3 EC: I 6 PA: L 3 4 5

Tends air drying equipment that heats propellant powder to recover process solvents, such as, acetone, ether, and alcohol for re-use:

Signals workers to move cars containing powder into solvent recovery house for air-drying treatment. Connects condenser and hot air system outlets to top and bottom ducts of cars. Sets heat regulator on hot air system, and starts blower to force hot air into cars to dry powder. Moves controls to start suction fan and condensers to recuperate process solvents from powder. Turns valve to drain solvents into collecting tanks. Observes temperature gauges and adjusts controls to maintain process temperature within solvent recovery house. Keeps temperature record chart.

8167-286 ASPHALT-PLANT-DRIER TENDER(petrol. & coal prod.) DPT:685
burnerman.

GED: 2 SVP: 2 EC: O 3 5 7 PA: L 4

Tends stationary or portable machine to dry and heat aggregate prior to mixing with asphalt:

Starts power unit to rotate drying and heating drum. Lights burner and turns valves to adjust drafts and regulate heat. Observes pyrometer to ascertain that process temperature is maintained. Starts conveyor such as bucket line or vibrating screens to load rotating drum with aggregate. Adjusts gate to regulate flow of aggregate from supply bin to conveyor. Lubricates and makes minor adjustments to equipment. May start fans in dust collector and activate water jets in scrubber.

8167-290 DRIER TENDER(chem., n.e.c.) DPT:665
GED: 2 SVP: 2 EC: I 3 5 7 PA: M 2 4 5 6

Tends driers that heat liquids, slurries or solid materials to remove water or volatile liquid components:

Starts conveyors to load driers, or shovels, dumps or pumps materials into pans, trays or other containers for placing into driers. Turns valves, and starts fans to admit steam and hot air to drying chamber. Observes thermometer and humidity gauges and moves controls to maintain temperature and air circulation in driers to withdraw vapors from filter system and drain materials. Examines and feels materials for moisture content, or draws samples for laboratory analysis. Starts discharge conveyor at end of cycle, to unload drier and transfer dried materials to storage or production area.

May record temperature and pressure readings, drying time and hourly production. May make minor adjustments to equipment. May tend particular type of drier and be designated accordingly; for example, Batch-Drier Tender
Cabinet-Drier Tender
Centrifuge-Drier Tender
Rotary-Drier Tender
Tunnel-Drier Tender
Vacuum-Drier Tender

8167-294 DRIER-TENDER HELPER(chem., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: I 7 PA: H 4

Helps to tend equipment that heats liquids, slurries or solid chemical materials to remove water or volatile liquid components, performing any combination of the following duties:

Fills sample bottles for laboratory testing. Inspects equipment and piping for leaks or malfunctions and notifies equipment tender or supervisor of unusual conditions. Cleans equipment, using hose and water. Fills boxes or drums with chemical ingredients, using filling device, and weighs contents, using scales. Marks identifying information on containers, using stencils. See also definition for term title, 02-160 HELPER (any ind.).

May inspect product through sight glasses at various stages of drying process to detect defects. May lower gauge tape into storage towers to determine quantity of material stored. May assist tender of particular type of drier and be designated accordingly; for example, Batch-Drier-Tender Helper
Cabinet-Drier-Tender Helper

Centrifuge-Drier-Tender Helper
Rotary-Drier-Tender Helper
Tunnel-Drier-Tender Helper
Vacuum-Drier-Tender Helper

Other Heat Treaters
8167-314 through 8167-350

8167-314 AMMONIA-PLANT OPERATOR(chem., n.e.c.)
DPT:382
GED: 3 SVP: 5 EC: B 5 6 7 PA: L 2 4 7

Controls reform furnace that cracks methane gas, and synthesis loop, converter and auxiliary equipment that combine hydrogen and nitrogen in a sequential reaction process to produce anhydrous ammonia:

Lights gas burner and starts pumps, scrubbers, and absorption units. Moves controls on panel board to regulate temperatures of solutions and to open valves to admit heated purified air and hydrogen into combustion chamber of burner, where nitrogen driven from air combines with hydrogen to form ammonia. Observes potentiometers, pressure and temperature gauges, and adjusts controls according to operating instructions and charts. Starts pumps to direct flow of fresh solutions into scrubbing and absorption towers when readings indicate excessive alkalinity. Records operational data in log book. Collects liquid ammonia samples from synthesis loop for testing in laboratory by opening valves of automatic sampling system or bleeding feed lines.

May compute percentage of hydrogen and ammonia in burner gases, using standard test procedure.

8167-318 OXIDATION OPERATOR, NITRIC ACID(chem., n.e.c.)
acid operator.
DPT:382
GED: 3 SVP: 5 EC: I 5 6 7 PA: L 2 4

Controls ammonia oxidation equipment and acid concentration units to produce nitric acid of specified strength for use in explosives manufacturing:

Turns valves and starts pumps to admit and circulate anhydrous ammonia through evaporator and converter units at specified rate. Observes gauges and chart recorders, and adjusts controls to regulate temperatures, pressures and reaction time to maintain process conditions. Starts compressors to supply air to converter to oxidize ammonia in presence of catalyst. Operates auxiliary equipment; such as, heaters, scrubbers, compressors, filters, distillation units, condensers and humidifiers that prepare or process materials leaving or entering converters. Draws and tests samples for specified characteristics, using standard gas-analysis procedures and equipment, and forwards other samples for laboratory analysis. Sets automatic control system that maintains process in safe operating condition and sounds alarm if malfunction occurs. Opens valve to admit flow of water to cooler and absorption tower to convert nitrous oxide to nitric acid. Starts pumps to transfer nitric acid to storage, or conversion unit for strengthening. Monitors temperature and pressure gauges, and adjusts valves to regulate flows of sulphuric acid and weak nitric acid into mixing tank and to control flows of steam, water, air and acids through dehydrating, absorption and bleaching towers, still and condenser to produce concentrated nitric acid. Records instrument readings in shift log book.

May dilute sulphuric acid following specified procedures.

8167-322 SULPHURIC-ACID-PLANT OPERATOR(chem., n.e.c.)
DPT:582
GED: 3 SVP: 5 EC: B 6 7 PA: L 2 4

Operates from control panel semiautomatic equipment that produces sulphuric acid by contact process:

Turns valves and moves levers to start and stop flow of liquids and gases through converter, heat exchangers, absorber, cooler, and related equipment. Monitors lights, gauges, and recording instruments on control panel to determine that temperature, steam pressure, and flow of sulphuric and nitric acids and oleum through system conform to plant standards. Patrols area and records gauge readings hourly. Collects sample of product, for laboratory analysis.

May replenish supply of sulphur in melting pit. May pump sulphuric acid into and from tank cars, tank trucks, and storage tanks.

8167-326 EVAPORATOR OPERATOR(any ind.)
DPT:682
GED: 3 SVP: 5 EC: I 6 7 PA: L 4

Operates one or more evaporators to concentrate chemical or sugar solutions or suspensions to specified density:

Pumps liquid into evaporator tank or vacuum pan. Switches on exhaust pump to obtain specified vacuum. Turns valves to admit steam into evaporator chest, coils or jackets, observes gauge and adjusts valve to maintain specified temperature. Checks gravity of concentrate, using hydrometer and adjusts feeds, temperatures and vacuum accordingly. Pumps concentrated liquid to storage or slurry to filter.

May operate equipment, such as preheaters, thickeners and filters. May operate multiple effect evaporators and be designated accordingly.

Multiple-Effect-Evaporator Operator

8167-330 TOWERMAN(soap)
DPT:362
GED: 3 SVP: 4 EC: I 6 7 PA: L 2 4 5 6

Operates heated-air tower from control panel to make a variety of soap powders by atomizing liquid soap, according to formula:

Starts pumps and fans, and adjusts valves to regulate flow of oil, air, liquid soap and perfume to tower or collectors, and steam to heat exchangers. Observes temperature, pressure and flow gauges and adjusts controls to maintain specified processing conditions. Weighs samples of material before and after drying, or subjects it to a moisture meter test to determine moisture loss and percentage of moisture remaining in powder. Inspects operating units such as towers, soap spray storage tanks, scrubbers, collectors and driers to ensure proper functioning of equipment. Keeps log of tower operations. Directs workers engaged in operating auxiliary machinery to regulate flow of materials and product. Oversees cleaning of towers, strainers and spray tips. Replaces defective equipment, such as strainers and pump valves, using hand tools.

May inspect product for such characteristics as density, colour, dye dispersal and particle size.

8167-334 SPRAY-DRIER TENDER(paint & varn.)
DPT:585
GED: 2 SVP: 3 EC: I 7 PA: L 4

Tends spray driers that evaporate water from slurries to produce paint pigments:

Observes instruments and monitors pigment washing process that removes impurities from pigment cake. Turns valves to add water to semi solid pigment to prepare pigment slurry, according to specifications. Starts pumps to force slurry through atomizer nozzle in drier, and adjusts nozzle to regulate spray as specified. Observes temperature recorders, and adjusts valves, controls, and dampers to heat and direct air blast through drier to evaporate water. Observes discharge conveyor for malfunctions to maintain flow of dried materials to packing area. Observes operation of automatic pigment-dust collection system and replaces collector bags as required, using hand tools. Flushes or rakes out accumulated powder remaining in drier, and clears clogged lines using steam hose and hand tools. Records temperature and pressure readings, type of nozzle used and density of powder obtained.

8167-338 EVAPORATOR TENDER(chem., n.e.c.)
DPT:685
GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends evaporators that condense used black liquor from pulp digesters to prepare it for further refining at recovery furnace:

Adjusts controls and turns valves of evaporators to regulate flow of liquor and maintain prescribed temperature to concentrate liquor to specified density. Tests samples of black liquor concentrate, using hydrometer and thermometer to determine density at specified temperature. Cleans evaporator chambers and tubes, using hose and hot water.

8167-342 FLAKER TENDER(chem., n.e.c.; explosives)
DPT:685
GED: 2 SVP: 2 EC: I PA: M 4

Tends drum-flaking machine that solidifies and converts chemical compounds into flakes:

Turns valve or starts pump to transfer molten materials or concentrated solutions from drier into feed pan of flaking machine. Adjusts rheostat and turns valves to regulate speed of revolving flaking drum that cuts flakes to desired thickness, and flow of coolant to control

solidification of flakes according to specifications. Scoops samples of flakes into container for laboratory moisture analysis. Dumps flakes into paper bags or paper lined containers, weighs and places containers manually onto pallets or conveyor for removal to storage area. May tend auxiliary equipment; such as grinding mills, shaker screens, loading conveyor and bag flatteners. May also tend equipment such as pelleter and water tank to manufacture T.N.T. pellets (nitropel).

8167-346 MULLED-RUBBER COOLER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 3 4

Tends conveyor, and spraying and drying unit that cools and dries mulled rubber stock:

Monitors flow of, or lifts rubber stock as it drops from mixer through batch-off mill onto water-filled conveyor for cooling. Removes stock adhering to mill rollers or accumulating on conveyor, using long-handled scraper. Adjusts conveyor speed and turns valves to regulate water spray and airflow that cools and dries stock.

May spray powder over slabs to prevent stickiness. May write identification data on slabs such as type and quantity of rubber stock produced and prepare production record sheet.

8167-350 SULPHURIC-ACID-PLANT-OPERATOR
HELPER(chem., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: B 6 7 PA: L 2 4 5 7

Helps operator to produce sulphuric acid, by contact process, performing any combination of the following duties:

Opens and closes valves, or moves levers, to direct flow of acid from production unit to storage tanks as directed. Observes machinery and equipment to detect malfunctions, leaks, and spills and reports them to maintenance crew. Cleans work area around units, using broom, shovel, and water hose. Collects samples for laboratory testing, using vial, test tube, or acid jar. Measures level of acid in tank, using weighted steel tape and records in log book. See also definition for term title, 02-160 HELPER (any ind.).

May record temperature and pressure gauge readings.

8171-CRUSHING AND GRINDING OCCUPATIONS, CHEMICALS AND RELATED MATERIALS

This unit group includes occupations concerned with operating and tending machines to reduce chemicals and related materials to smaller particles by any combination of chipping, crushing, cutting, grinding or pulverizing action.

8171-110 PULVERIZER OPERATOR(petrol. & coal prod.) DPT:682
crusher and blender operator.
GED: 3 SVP: 4 EC: I 5 6 7 PA: L 4 7

Operates machines that crush or pulverize coal or coke to produce metallurgical coke or industrial fuel:

Moves levers and turns valves to regulate and adjust crushers, driers, pulverizers, screens and conveyors, according to specified product. Adjusts bin gates and deflector blade to control rate of feed to conveyors, crushers and screens. Fills scale tank to specified weight with pulverized coal or coke, or adjusts controls to direct coal or coke to storage bins. Observes equipment for correct operation and reports malfunctions or necessary repairs. Clears stoppages, using bar and cleans spilled material around machines, using broom and shovel. Takes samples of product and tests moisture content, using test meter. Lubricates machinery, using grease gun. Records operating data in shift log.

8171-114 GRINDER OPERATOR(rubber) DPT:582
millman.
GED: 3 SVP: 3 EC: I 5 7 PA: H 3 4 7

Operates grinding machine that grinds and pulverizes vulcanized reclaimed rubber for re-use:

Starts grinder, pulverizer and screw conveyor, by depressing button. Loads pre-selected scrap into grinder. Observes thermometers and dials for room and exhaust temperatures. Regulates speed of conveyor feed to pulverizer to avoid overloading and prevent overheating and burning of rubber. Observes indicators for water cooling system and air vent temperatures, adjusts water flow valve and opens airflow ports, to cool machine jacket or grinding stock. Observes magnetic grid at mouth of pulverizer that screens pellets to remove metallic matter. Removes shaker screen and wipes off accumulated metal, using cloth and broom. Places bag on scale, under discharge hopper of pulverizer, to load ground rubber in bag to specified weight. Folds and sews bag. Marks weight on tag and attaches tag to bag. Places bag on skid, manually, for removal to storage area. Keeps records of weight and type of material ground.

8171-118 COKE GRINDER(petrol. & coal prod.) DPT:685
GED: 2 SVP: 4 EC: I 5 7 PA: L 4

Tends machine that grinds coke, to produce carbon and graphite: Adjusts mill gauge to meet grind specifications, and starts conveyors, screening and grinding equipment. Moves gate levers to regulate flow of raw coke into machine, and processed coke to mixer or packing-machine hopper. Turns valve to regulate moisture content of material and opens valves to fill bucket under hopper spouts. Observes operation to ensure continuity of flow and to detect malfunctions.

May tend machine that grinds, and blends pitch, oil and coke used in making electrodes.

8171-122 PULVERIZER(chem., n.e.c.) DPT:685
blender.
GED: 2 SVP: 4 EC: I 7 PA: H 4

Mixes, dries, micropulverizes and blends synthetic food dyes for commercial application:

Weights synthetic dyes, to prepare batch according to formula. Scoops batch into prefilled hot water tank to mix slurry, and pumps slurry into trays. Places trays in steam heated oven for drying. Dumps trays of dried synthetic dyes into pulverizer and starts machine. Blends pulverized dyes, by moving controls on blender and adding ingredients as specified. Takes sample for laboratory test, using scoop. Dumps pulverized dyes into kegs, weighs and seals kegs and transports them to storage area, using handtruck.

May stack filled kegs, using powered handtruck.

8171-126 PULVERIZING-AND-SIFTING EQUIPMENT
TENDER(explosives) DPT:685
GED: 2 SVP: 4 EC: I 6 PA: H 3 4

Tends jaw crusher, disintegrator, ball mill, and agitator-sifter to pulverize and sift ingredients of propellant and priming powders, performing any combination of the following duties:

Feeds raw material into machine hopper, manually or using scoop. Adjusts space between reciprocating crusher jaws, by turning screw with wrench. Changes number of balls in mill. Turns rheostat to regulate vibrator speed. Starts jaw crusher, ball mill and agitator-sifter, to obtain granules within specified grain size and in desired proportions. Adds or screens out grains, following laboratory size analysis, to bring grains to acceptable proportions. Pours sifted material into rubber pouches and transfers them to drier, pushing handtruck.

8171-130 STONE-MILL TENDER(paint. & varn.) DPT:685
millman; paint grinder, stone mill.
GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Tends mill equipped with grinding stones to reduce paint or paint ingredients to specified fineness:

Dumps ingredients from chute to hopper which feeds mill automatically, and starts mill. Examines mixture to determine fineness of grind, using graduated bar. Turns screw to set clearance between grinding stones, to obtain required fineness of ingredients. Opens valve to transfer mixture into wheeled tank. Cleans mill stones, hopper and scraper, using water hose, solvent and brush.

8171-134 WHEEL-MILL TENDER(explosives) DPT:685
GED: 2 SVP: 4 EC: 1 6 7 PA: M 4 7

Tends wheel mill that crushes explosives ingredients; such as, charcoal, potash and sulphur, for further processing: Dumps prescribed number of bags of ingredients into bowl of wheel mill and spreads ingredients with wooden shovel to charge mill. Starts wheel mill revolving for specified time, by pulling lever and turning motor switch. Stops mill and fills bag with powder, using shovel, for storage or further processing. Loosens or breaks- up caked powder with spud, ensuring that powder is well soaked with water. Sifts pulverized material, by dumping bags onto screens and manually pushing material through screens with wooden scraper. Weighs bags of pulverized material to obtain desired weight. Moves bags to storage or shipping, using handtruck. Cleans charge house, using broom and dust pan, and washes mill with water hose. Inspects, oils and greases wheel mill bearings and shafts, and tightens scraper bolts with wrench to minimize danger of explosion. May tend vibrating screens to separate particles of varying size.

8171-138 CUTTERMAN(syn. fibres) DPT:585
glassroom attendant; staple cutter.
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Tends machine that cuts fibre glass threads or synthetic fibre filaments, performing any combination of the following duties: Threads fibreglass or synthetic filaments through guide, or around drum and into cutters of machine. Depresses switch to start action of blades that automatically cut material into specified lengths preparatory to washing or spreading on conveyor. Observes cutting operation to detect malfunctions, and adjusts speed of cutters, as required. Feels tension of fibreglass threads from spools to cutters to prevent breakages. Replaces spools on feed stand with full ones, and ties together ends of material to ensure continuous feeding of machine. Replaces cutting blades, using hand tools. Records production data such as condition, quantity and type of material used, and malfunctions of machine.

8171-142 GRINDER TENDER(chem., n.e.c.) DPT:585
crusher operator; pulverizer operator.
GED: 2 SVP: 3 EC: 1 7 PA: H 4

Tends machine that pulverizes solid materials used in manufacturing chemicals and related products: Installs grinding discs or screens of specified type and mesh in machine, using hand tools. Starts feed conveyor and shovels or dumps material into machine hopper. Starts grinder and observes ground product as it is discharged into containers, for impurities, lumps, or improperly sized particles. Cleans machine and conveyors, using air hose, scrapers, brushes or vacuum cleaner, to prepare equipment for further grinding. Weighs container, records weight or lot number, and enters number of containers filled on inventory record. May shovel ground product into containers, for storage, shipment or further processing. May tend machine that fills bags or drums with product. May repair equipment, using hand tools, such as wrenches, hammers and pliers.

8171-146 BLACK-POWDER GRAINER AND GLAZER(explosives) DPT:685
GED: 2 SVP: 3 EC: 1 6 7 PA: L 4 7

Tends corning mill to grain black powder chips and glazing mill to smooth and harden grains: Unloads black powder chips into corning mill hopper, hauling truck into position with power driven winch. Washes sides, wheels and platform of truck with hose after unloading and lowers empty truck into place under grain chute using winch. Evacuates personnel from building, closes all doors and pulls lever in control house to start corning mill. Stops machine after specified time and shovels spilled grains into truck. Clamps bag in position at dust hopper to collect maximum amount possible. Inspects grains, shaker screens, rolls and shaft bearings regularly to detect faulty graining, overheating and defective screens. Adjusts spacing between mill rolls, according to powder type, using feeler gauge. Starts glazing mill, and opens air and graphite valves to coat grain with graphite for hardening and smoothening. Verifies temperature of grains with thermometer. Opens trap door at end of cycle to release glazed powder into truck and delivers powder to pack house. Oils and greases equipment as

required. Sweeps floors, bags dust and washes floor and equipment, using broom, spud, shovel and water hose.

8171-150 DOPE-HOUSE MAN(explosives) DPT:685
block-breaker operator; dry-house operator.
GED: 2 SVP: 3 EC: 1 5 6 PA: M 4

Tends equipment that grinds mixes and screens materials; such as, nitrocotton blocks, sodium nitrate, sulphur and clay, for use in making explosives: Dumps barrels of nitrocotton cakes into manual screener and turns handle of screener to grind cakes into powder. Scoops powder into muslin bags, ties bags with drawstring, and delivers to processing area. Tends central control panel to start conveyors and elevators that convey materials such as sodium nitrate, sulphur and clay through mixer, grinder and screener and deposits them in bins. May test moisture content of ingredients, using carbide-filled jar and gauge that registers gas produced.

8171-154 LEAD-OXIDE-MILL TENDER(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 6 7 PA: H 4

Tends crushing mill to make lead oxide from pig lead, for use in storage batteries: Places bars of pig lead on conveyor and sets control timer to deposit bars into grinding drum at regular intervals. Turns tap to spray water inside mill to hasten oxidation process and to regulate temperature. Places empty containers on conveyor and sets scale to register weight of container. Presses switch to start mill and sets automatic signal device which sounds when container is filled to required level. Removes filled containers and loads them on pallet, using hoist. Tags container to indicate weight and batch number. Monitors process and makes adjustments as required. Wets floor to settle dust, using hose. May break flakes and lumps, using crowbar, and mix powdered lead oxide with flakes or lumps to facilitate powdering. May tap conveyor pipes attached to mill, using wooden mallet, to dislodge buildup on pipes.

8171-158 SCRAP-RUBBER GRINDER(rubber) DPT:685
fine grinder.
GED: 2 SVP: 3 EC: 1 5 7 PA: M 3 4

Tends mill that grinds scrap rubber into fine particles for reprocessing: Installs shaker screen of specified mesh, using wrench. Adjusts mill rolls for grinding by turning wheel to specified setting. Starts mill, conveyor, shaker screen and fans to transfer ground stock to reclaimator machine or to storage. Feeds scrap rubber into mill rolls by shoveling, opening slide on conveyor or dumping barrels of material. Observes ground rubber moving over conveyor and through shaker screen to detect jamming. Turns water valve to regulate temperature of rolls to prevent scorching stock. May position drum at discharge end of chute and open slide to permit outflow of ground rubber stock passing through shaker screen, when off-bearing of material is not automatic.

8171-162 BREAKER TENDER(petrol. & coal prod.) DPT:685
coal breaker.
GED: 2 SVP: 2 EC: 1 7 PA: L 4

Tends machine that breaks coal into lumps of specified size, prior to pulverizing: Starts steel drum which revolves, breaking coal as it tumbles and passes through perforations in drum. Starts conveyor to transfer coal to and from breaker. Observes flow of material on belt to detect and remove foreign material. Lubricates breaker, using grease gun and oil can. Cleans work area, using shovel and broom.

8171-166 COLOUR GRINDER(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends roller mill that crushes and blends particles of pigment in batches of viscid organic materials, such as ointment and printing ink: Starts roller mill and scoops pigment into hopper or pours ointment between revolving rolls. Observes distribution of pigment particles on roll of mill and adjusts roller clearance, by moving lever or by using hand tools and gauges, to obtain even grinding and blending of

pigments. Places container at discharge end of mill to collect batch. Covers container with lid and carries to storage area. May clean rolls and equipment, using brushes, cloths, solvents and hot water.

8171-170 CRUSHER TENDER(linoleum prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that crushes scrap vinyl and asbestos preparatory to reprocessing into floor tile: Pushes button to start continuous flow of scrap material from calendar and punch press to conveyors which carry material into crusher. Starts crusher and observes flow of material and turns handwheel to regulate speed of conveyor. Removes dirt and other foreign matter from conveyor by hand and dislodges jammed material. Presses button to feed mottle (pieces of vinyl and asbestos) to screens that separate material according to size. May replace full bins of mottle with empty ones, by operating electric handtruck.

8171-174 DICING-MACHINE TENDER(plastic prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: H 4

Tends dicing machine that automatically dices, weighs and bags extruded plastic materials: Observes automatic flow of material from cooling unit into dicing machine. Starts machine and moves lever to adjust cutter speed that regulates size of pellets cut. Sets dial on weigh-scale at discharge end of machine, to required weight. Positions empty bag or box under automatic discharge chute of dicing machine. Closes bag, using hand stitcher or heat sealer. Stacks bag or box on skid, for removal. Works as part of a crew. May tend auxiliary equipment, such as tumbler drier.

8171-178 HYDRATOR TENDER(cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: L 4 7

Tends machines that crush, pulverize and hydrate limestone to produce hydrated lime for commercial use: Starts machine and moves panel controls to adjust automatic weighing hopper and conveyors that feed specified amounts of burnt limestone into machine. Turns valves to control spray of water onto lime in hydrator. Feels texture of product to ensure conformance to standards. Observes colour of hydrated lime through port holes in hydrator or pushes wooden testing rod into mixture and examines mixture colour on wood. May add colouring agent to mixture to impart ivory colour to finished product. May mix lime and water to make milk-of-lime slurry.

8171-182 PLASTICS GRINDER(plastic prod.) DPT:685
shredder, plastics.
GED: 2 SVP: 2 EC: I 5 PA: M 3 4

Tends machine that grinds particles of solid plastic materials to specified size: Starts machine and dumps or shovels plastic material into hopper, or starts automatic-feeding mechanism. Observes equipment to detect stoppages. Moves lever to fill drums with ground material and tags drums according to size and colour of ground plastic. Cleans equipment, using airhose, scrapers, solvents, cloths or brushes.

8171-186 SCRATCHER TENDER(linoleum prod.) DPT:685
GED: 2 SVP: 2 EC: I PA: H 3 4

Tends scratcher machine that granulates colour mix for use in hard-surface floor covering: Adjusts roll clearance and speed of scratcher motor to attain required particle size, by turning knobs and depressing levers. Starts scratcher

and positions pans under discharge trough to receive granulated mix from scratcher machine. Writes colour and pattern data on tickets to be retained on file.

8171-190 SHREDDING-MACHINE TENDER(chem., n.e.c.) DPT:685

cutter operator; steeping operator.
GED: 2 SVP: 2 EC: I PA: M 4

Tends machine that reduces wood pulp (cellulose) sheets into specified size, by action of cutting, grinding or caustic jet for use in making cellulose film or synthetic fibres: Places roll of wood pulp on conveyor, tears off protective wrapping from roll, using knife. Places mandrel through roll, mounts roll into unwinding brackets, and moves lever that lifts roll to unwinding position. Threads sheet into machine feed rolls, manually. Starts machine and observes discharge of shredded pulp into conveyor system. Adjusts braking device to prevent bulking or tearing of sheet. Records weight and number of rolls cut. Cleans equipment and working area, using brush, broom and trash can. May mount roll of wood pulp on unreeling stand, using overhead crane. May patrol several shredding machines to detect malfunctioning.

8171-194 RUBBER-CUTTING-MACHINE FEEDER(rubber) DPT:686

rubber cutter.
GED: 2 SVP: 2 EC: I PA: H 4

Feeds machine that cuts scrap rubber, rubber sheets and bales of crude rubber, into pieces, for further processing: Removes wood wrapping, metal straps or burlap covering, using cutters and transports bales to machine, using hand cart. Loads bale on machine bed, manually or using electric hoist. Moves lever to release hydraulic ram that pushes bale through stationary knives. May position layers of rubber on bed of cutting table, using hook, and move lever that releases blade of guillotine to cut rubber into strips. May weigh cut rubber material, using scale, to facilitate preparation of batches.

8171-198 SOAP CHIPPER(soap) DPT:686
GED: 2 SVP: 2 EC: I 5 7 PA: H 4

Feeds soap sheets into machine that reduces them to chips, and bags and weighs chips: Pushes button to start machine and conveyor belt. Drops soap sheets from storage bin to conveyor belt, which feeds them into machine hopper. Observes operation of chipping machine and discharge of chips to conveyor belt or into bagging hopper. Fills bags with chips, seals them using electric stitcher and lifts bags onto pallet. May route chips by conveyor belt to drying room, or spread them evenly in trays and convey trays to drying room. May hand stamp date code on bags.

**8171-199 OTHER CRUSHING AND GRINDING
OCCUPATIONS, CHEMICALS AND RELATED
MATERIALS**

This group includes crushing and grinding workers, not elsewhere classified; for example, those who feed fan-type grinding or beating machines in the treatment of fibres of filler materials used in making plastic materials; tend mills to dry and pulverize pasty chemical materials; tend rotating-micropulverizing and wet-milling machines to break up and pulverize titanium oxide into pigments; tend machines that crush and screen insulating mixture from electric furnaces in which carbon is graphitized. A typical example of an occupational title covered by this residual group definition is: Beater(chem., n.e.c.)

**8173-COATING AND CALENDERING OCCUPATIONS,
CHEMICAL AND RELATED MATERIALS**

This group includes occupations concerned with covering a variety of materials and objects with protective, decorative, preserving or other substance; imparting a desired finish or insuring uniform thickness in materials by pressure applied with machine rollers; and forming or pressing materials into sheets or layers. Activities include: coating, saturating, dipping, compressing, forming, laminating and vulcanizing.

**Coating and Impregnating Occupations
8173-110 through 8173-158**

8173-110 COATING-EQUIPMENT OPERATOR(metal stamp.,
press. & coat.) DPT:362
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Operates equipment that prepares metal assemblies for coating and coats metal assemblies with protective plastic coating: Tests cleaning and priming materials in tanks, by titration and colour comparison and adds chemicals and water as required to obtain specified concentration. Starts unit, observes cleaning and priming of metal assemblies and directs other workers to alter time and sequence of operations according to type of metal to be coated. Starts pre-heat oven and curing oven and adjusts thermostat to required temperature. Lifts metal assembly into pre-heat oven, using hoist, and allows assembly to heat for required time. Lowers heated assembly into tank of powdered or liquid plastic to fuse plastic to metal. Lifts coated assembly into curing oven, using hoist, to cure and glaze coating. Removes assembly from oven after curing and allows it to cool. Inspects assembly to ensure that coating is of prescribed thickness and that it has adhered to metal.

8173-114 LATEX-COATING-MACHINE OPERATOR(textile)
DPT:682
GED: 3 SVP: 5 EC: I 4 PA: L 4 7

Operates machine that applies latex coating to carpets: Reads specifications to ascertain amount of latex coating to be applied, temperature of drying unit, and speed of machine to be maintained for various carpet styles. Starts pump to admit latex solution into trough, and opens steam or gas valves to heat trough. Operates switch to start rollers that move carpet through machine. Adjusts controls to regulate speed of machine, temperature of drying and cooling units and speed of applicator roll. Turns setscrew to adjust latex scraper according to quality of carpet being processed. Observes lights, speed, temperature and pressure gauges on control panel to ensure specified operating conditions. May clean machinery and associated equipment periodically, using air, water, or steam hoses and scraping tools.

8173-118 COATING-MACHINE TENDER(paper prod.; textile)
DPT:685
GED: 3 SVP: 5 EC: I PA: M 4 7

Tends machine that coats cloth, paper, or other material to produce vinyl or adhesive coated products: Installs roll of material onto machine, using hoist. Threads material through rollers and onto take-up reel. Adjusts scraper blade or roller clearance to produce coating of specified thickness. Turns on dryer heating unit and starts machine when dryer temperature reaches specified setting. Turns valves to control flow of coating solution onto sheeting or into pan. Observes process to prevent slippage of sheeting from width guides, and turns valves and moves machine controls to correct such defects as streaks, wrinkles, and turned edges in material being processed.

8173-122 COATER, ASPHALT(asphalt roof.) DPT:662
GED: 3 SVP: 4 EC: I 5 7 PA: L 4 7

Operates machine to coat asphalt-saturated roofing felt with asphalt-

lime mix:

Threads saturated felt through machine rollers. Starts lime conveyor, turns thermostat control to regulate temperature of lime furnace, and turns wheels to attain specified proportion of lime to asphalt in coating mixture. Moves levers, and turns valves and setscrews to regulate machine speed, flow of coating mixture, coating roll tension, and depth of coating. Signals other worker to adjust machine speed at saturating and slate-coating units to prevent damage to felt.

8173-126 CARBON-COATER-MACHINE OPERATOR(misc.
prod. fab., n.e.c.) DPT:682
coater, carbon paper.
GED: 3 SVP: 4 EC: I 7 PA: M 3 4 7

Operates machine that coats paper or plastic sheeting with coloured wax-oil solution to make carbon paper: Draws solution from storage vat, using pail, and pours solution into pans of machine. Transports roll of paper from storage area, using lift truck. Installs roll on machine and threads paper or plastic through series of rollers that apply coating, imprint back with identifying data and harden coating by chilling. Observes gauges and turns steam and cold water valves to regulate temperature of heating and chilling rollers. Starts machine and watches for defects in carbon paper, such as tears, slits, holes, light spots, blurred or incomplete printing, and lack of sheen in coating. Turns nuts that adjust tension of roll to eliminate wrinkles. Measures thickness of coated papers, using thickness gauge, to ascertain that specified quantity of coating is being applied. Cuts jammed or damaged paper from rolls, using knife. Cleans rollers and machine parts, using solvent and cloths. May cut samples for testing, using knife.

**8173-130 PLASTIC-SPREADING-MACHINE
OPERATOR**(plastic prod.) DPT:682
GED: 3 SVP: 4 EC: I PA: M 4 7

Operates machines that spread synthetic resins and glass fibres over continuous sheet of plastics film to prepare materials for subsequent moulding: Moves controls to set and regulate width of sheet and to adjust line speeds with flow rate of materials. Moves plungers to start flow of synthetic resin solution through metering device. Observes gauges and starts pumps and degassing system on supply tanks to regulate pressure. Inserts thermometer into synthetic resin to verify temperature. Observes tachometers, flowmeters and gauges to verify specified process conditions.

8173-134 RUG-COATING-MACHINE OPERATOR(textile)
DPT:682
GED: 3 SVP: 4 EC: I 5 PA: M 4

Operates machine that coats surface of woven or needle-punch rugs with vinyl or other coatings to prolong life of rug and retard soiling: Dumps specified amounts of coating ingredients into vat and starts mixer by pushing button. Turns valve to transfer coating mixture from vat to machine reservoir. Observes gauges and adjusts electrical controls to maintain specified temperatures in bath and drying compartments. Threads rug material through machine. Pushes switch to start machine that moves material under spray nozzles into drying compartments and to rewind roller. Cleans machine and equipment, using water, solvent, brush, scraper and chisel.

8173-138 BUCKLE-STRAP-MACHINE TENDER(rubber)
DPT:485
GED: 2 SVP: 3 EC: I PA: L 4

Tends machine that coats uncured rubber or rubberized fabric strips with cement and winds them on drum to make straps of specified thickness for rubber footwear: Computes number and kind of bundles of strips required, and keeps production chart. Places uncoated strip behind drum, threads end through guides and cement reservoir, and inserts end in take-up groove of drum. Turns handwheel to set machine speed. Starts machine that winds strip on drum, ensuring each turn is aligned with edge and adheres to surface of previous turn. Observes operation to detect possible malfunctions. Pulls knife along drum groove, cutting across completely wound strip to form sheet. Pulls sheet from drum onto cutting table, using stick, and cuts sheets into straps of specified

length with knife, using triangular cutting bar as guide. Lifts rows of cut straps with stick and places them in bundle.

8173-142 SATURATING-MACHINE TENDER(asphalt roof.; linoleum prod.) **DPT:685**
saturator tender.
GED: 2 SVP: 3 EC: 1 3 5 7 PA: M 4 7

Tends machine that saturates continuous rolls of asbestos or felt paper with asphalt, tar or other substance to produce roofing felt or backing for hard-surface floor coverings:

Threads material through or around series of machine rollers. Starts machine and adjusts controls to regulate speed and tension of rolls, and flow of saturant on material and rollers to ensure uniform saturation and prevent damage to materials. Observes gauge and adjusts thermostat to regulate temperature of saturant in reservoir. Observes continuous sheet of material as it passes through machine to detect flaws.

May splice ends of rolls together, using splicing iron and hand snips. May be designated according to material processed; for example, Roofing-Felt Coater(asphalt roof.)

8173-146 SPREADER MAN(rubber; textile) **DPT:685**
GED: 2 SVP: 3 EC: 1 6 7 PA: M 4 7

Tends spreader machine that coats or impregnates fabric with material, such as plastic or rubber compounds:

Weights fabric roll, liner shell and core, to permit subsequent weight comparison with coated roll. Threads fabric under spreader blade around and between rollers, through coating reservoir if machine is equipped with automatic compound feed, and through curing oven and onto wind-up roll. Turns handwheels to adjust height of spreader blade and setscrews to adjust and set guides for width of spread, using wrench. Turns steam valves to regulate heat of drying rolls. Opens valves to allow coating compound to flow into reservoir, or spreads on fabric in front of spreader blade, placing containers on either side to catch excess solution. Starts machine and observes fabric for sufficiency and evenness of coating, and verifies gauge of material, using micrometer. Weighs coated roll to determine number of passes required to meet established standards.

May tend machine equipped with additional rolls to combine two layers of fabric. May repeat procedure to build up coating to required thickness. May thread fabric through dip tank to coat both sides of material. May tend machine that coats rubberized cloth with varnish to provide hard water-proof finish and be designated, Varnish-Machine Tender

8173-150 COATING-MACHINE TENDER(linoleum prod.) **DPT:665**
GED: 2 SVP: 3 EC: 1 PA: H 4 5 6

Tends machine that coats asbestos-fibred or asphalt-impregnated felt paper with paint or lacquer, to seal in asbestos or asphalt and to prevent discolouration of light coloured enamels:

Presses buttons to start machine that coats felt paper with paint or lacquer. Observes signal lights on panel to ensure proper rewinding of coated paper in festoon oven for drying. Adjusts oven controls to maintain specified temperature. Removes rolls of rewound paper from ovens when properly dried, using hoist. Advises foreman when supply of paint or lacquer runs low, and directs worker to bring supplies as required.

8173-154 COATING-MACHINE FEEDER(linoleum prod.) **DPT:686**
GED: 2 SVP: 2 EC: 1 PA: H 3 4

Feeds machine that coats felt paper with lacquer or paint, performing any combination of the following duties:

Mounts roll of felt paper on machine brackets, using hoist, and manually feeds end of paper through rollers. Observes and maintains lacquer or paint level in pans to ensure that rolls remain covered. Examines impregnated felt paper to detect tears. Notifies machine tender of faulty processing. Removes dried painted floor covering from machine, using hoist. Splices end of roll. Cleans rollers with brush, while machine is running, to prevent blockages.

8173-158 SATURATING-MACHINE FEEDER(asphalt roof.; linoleum prod.) **DPT:686**
felt hanger.
GED: 2 SVP: 2 EC: 1 3 5 6 7 PA: H 3

Installs rolls of untreated roofing, felt or floor-covering material, with aid of other worker, on feedrack and prepares roll for continuous asphalt-saturating process:

Inserts spindle in mandrel and pushes or lifts roll onto feedrack. Positions washer and secures locking device over spindle ends. Cuts away roll covering, using knife. Threads end of felt through rollers, and splices it to end of previous roll with tape and hot iron. Examines felt as roll unwinds and repairs defects, such as holes and tears, using tape and iron.

Calendering Occupations 8173-178 through 8173-214

8173-178 CALENDER OPERATOR(plastic prod.; rubber) **DPT:682**
GED: 3 SVP: 5 EC: 1 7 PA: M 4

Operates machine, singly or as member of crew, to imprint or form rubber or plastic sheeting or rubberized fabric:

Turns steam valves to regulate heat of rolls, judging heat by progress of material. Turns handwheels to adjust distance between rolls. Verifies thickness of calendered material, using gauges. Inserts pieces of rubber between rolls to feed machine, or positions conveyor feeder in front of rolls that carry strip of rubber from warmer mill for continuous feeding. Threads fabric or sheeting around and between rollers and through water coolant tanks and onto pickup reel core or takeoff conveyor. Adjusts knives that trim salvage, or cuts material to specified width, by moving knives along bar and turning setscrews. Adjusts weights on arms of holders so that knives will press against rolls and cut through thickness of material processed. Observes calendered material for defects, such as bubbles, lumps, streaks and pitting, indicating faulty stock.

May direct other workers who feed stock to machine, change takeup reels, remove and inspect stamped parts, and place them in books, boards and frames.

8173-182 CALENDER OPERATOR, MULTI-ROLL(plastic prod.; rubber) **DPT:682**
GED: 3 SVP: 5 EC: 1 3 7 PA: L 4 7

Operates multi-roll calender to produce plastic sheeting and roll sheets to specified thickness:

Adjusts automatic temperature control to heat calender rolls to specified temperature. Starts machine and adjusts conveyor speed to regulate feeding of stock. Turns adjustment wheels of rollers to specified settings to stretch fabric for calendering. Examines calendered material for defects, such as wrinkles, holes, lines or blisters, and adjusts machine setup when necessary. Verifies thickness and width of calendered stock with gauge and ruler. Positions knife to trim edge of calendered fabric.

May direct other workers in changing feed or take-up rolls.

8173-186 SPONGE-RANGE OPERATOR(textile) **DPT:682**
GED: 3 SVP: 5 EC: 1 3 PA: L 4 7

Operates sponge range consisting of series of units, such as calender machine, curing press and steam cabinet, to apply sponge rubber, silicon-foam or latex sheets to back of carpeting:

Turns valves to set temperature of curing press and humidity of steam cabinet, according to thickness of rubber and type of carpeting. Threads carpeting to be processed through units. Starts machine and observes flow of carpeting through units, gauges thickness of coated carpeting with micrometer, and feels and scans carpeting to detect variations from standards. Turns handwheel to regulate speed of curing press so stock will be vulcanized according to specifications. Increases or decreases thickness of stock sheet, by regulating controls. Adjusts temperature of curing press and humidity of steam cabinet to maintain specified quality. Changes blanket of curing press, using hand tools. Records style number and yardage of carpeting processed.

8173-190 CALENDER OPERATOR, FLOOR TILE(linoleum prod.) DPT:682
GED: 3 SVP: 4 EC: 1 5 PA: L 4 7

Operates calender machine that rolls and compresses materials, such as asphalt, plastic, rubber or vinyl-asbestos, into sheeting to produce floor tiles:

Sets thermostat to obtain specified roller temperature and turns valves to admit coolant into other rollers. Starts calender machine, observes temperature-recording charts, and adjusts controls to maintain heat of rollers within specified limits. Turns knobs to regulate speed of conveyors moving material to calender.

May regulate flow of marblizing chips and wax onto sheeting to obtain specified pattern.

8173-194 SPONGE-PRESS OPERATOR(rubber) DPT:682
GED:3 SVP: 4 EC: 1 3 5 6 PA: M 2 3 4 7

Operates conveyor-type calendering and vulcanizing machine that rolls out and cures, in continuous process, sponge rubber sheeting for use as gaskets, underlay for carpeting, and footwear insulation:

Turns handwheels and capstan screws to set distance between calender rolls, and between vulcanizing plates and conveyor. Verifies setting with feeler gauges. Starts calender unit to produce uncured sponge rubber sheeting. Sets controls that regulate temperature of each vulcanizing plate. Observes temperature gauges and starts machine- conveyor, when plates reach specified temperature, to vulcanize calendered sheeting. Replaces worn canvas conveyor belts between calendering and vulcanizing units, using portable vulcanizing machine to bond ends. Adjusts tension bars that tighten belt, using wrenches. Mounts roll of underlay backing cloth in cradles, using electric chain hoist. Threads backing cloth through series of rollers that press it onto sponge rubber sheeting. Adjusts width between calender rolls to regulate thickness of sheeting and adjusts temperature of vulcanizing plates when there are deviations from specifications in thickness or curing.

May operate vulcanizing wire-mesh conveyor with warming mill, calender and vulcanizing plates to expand and vulcanize rubber to produce waffle-imprinted underlay. May be designated according to machine operated; for example, Rug-Underlay-Machine Operator

8173-198 CALENDER LET-OFF MAN(plastic prod.; rubber) DPT:682
GED: 3 SVP: 3 EC: 1 4 PA: M 4 7

Operates let-off, dipping and drying units of four-roll calender that bonds rubber to fabric:

Positions fabric roll in let-off rack, using hoist, and starts festoons. Splices beginning of undipped roll to end of roll in process, with gum strip, and aligns and cures splice in vulcanizer. Adjusts guides and pre-tension rolls to maintain specified width of fabric during dip process. Moves controls on central panel to adjust drier temperature, solution level in dip tank, and festoon speed.

May tend wind-up rack when operating dip unit independently of calender. May notify other workers of material defects or machine malfunction.

8173-202 LAMINATING-MACHINE TENDER(rubber) DPT:685
GED: 2 SVP: 3 EC: 1 4 5 6 PA: M 3 4 7

Tends machine that combines two continuous sheets of material; such as treated rubber, sponge rubber, fabric, felt, fleece or nylon cord:

Transfers rolls of specified material to machine, using handtruck. Hoists rolls of material from handtruck into machine cradles, using chain hoist. Turns steam valve to heat rollers. Threads ends of each roll of material to be combined over rollers, between combining rollers and onto single take up roll. Sets pressure of combining rollers to produce adhesion of both materials. Starts machine and moves lever to engage clutch to start material winding. Controls tension and keeps edges of rolls aligned during winding. Cuts and tapes ends of unused material. reads yardage indicator and marks amount left on roll.

May thread polyethylene separator material through machine onto laminated windup roll to prevent layers sticking together. May work as member of a two man team. May maintain production and scrap records.

8173-206 PLANISHING-PRESS TENDER(plastic prod.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends planishing press to impart finish to plastic sheets:

Selects metal planishing plates according to finish desired. Places plastic sheets between plates and slides plates into platens of hydraulic press. Starts press and sets time cycle control to heat press to specified temperature, and compress plastic sheets between plates. Removes plates from platens after specified time and strips plastic sheets from plates. Examines sheets for defects and adjusts heat and pressure controls as necessary. Cleans plates, using cloths and solvents.

8173-210 CALENDERING-MACHINE TENDER(plastic prod.; rubber) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 3 4

Tends calendering machine that forms rubberized fabric or plastic sheeting:

Replaces empty shell on let-off rack with roll of base fabric, using chain hoist. Splices end of fabric to trailing end of roll in process using gum strip. Aligns and cures splice in vulcanizer. Sets yardage counter, starts machine and observes operation to detect faulty calendering and adjusts sheeting speed and tension. Cuts calendered fabric with scissors, and lowers full roll to floor, using hoist. Positions liner roll on holding rack and full roll on winder rack, using hoist. Feeds liner into fabric on windup roll to provide separation of layers of calendered fabric. Trims ragged fabric edges with knife. Examines fabric for wrinkles or other defects, and tags finished rolls to show weight, yardage and stock type.

May convey fabric rolls between storage and production areas, using forklift truck. May clean work area and machine.

8173-214 CALENDER-WIND-UP TENDER(plastic prod.; rubber) DPT:685
GED: 2 SVP: 2 EC: 1 6 PA: M 4 7

Tends wind-up rack on multi-roll calender to wind calendered fabric, such as vinyl and rubber, on liner rolls:

Starts festoons that accumulate fabric during roll change and stops wind-up rack. Cuts fabric with scissors between machine and full roll and guides fabric into roll on auxiliary rack with aid of other worker. Stops festoons and starts wind-up rack, and moves tension and speed levers to wind new roll. Places full roll on scale, using hoist. Reads yardage gauge and compares roll weight with standard on yardage chart for conformity to specifications.

May report weight discrepancies and fabric defects.

Miscellaneous Coating, Calendering And Related Occupations 8173-234 through 8173-299

8173-234 HOSE MAKER, MACHINE(rubber) DPT:684
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Operates machine that winds plies of rubberized fabric and gum-rubber stock on rubber tubing to form industrial hose:

Places mandrel and precut rubber tubing on workbench. Swabs mandrel with soapstone solution and pushes it into rubber tubing. Adjusts machine guides to accommodate ply stock of specified width. Positions mandrel with tubing on machine rollers and swabs rubber tubing with cement to provide adhesive surface. Positions precut ply stock between guides and depresses pedal to wind ply stock around rubber tubing. Cements brand label on hose in specified location. Examines hose for wrinkles and loose plies. Trims and cements tubing to seal row ends of ply stock.

May smooth wrinkles and press plies together, using fingers and roller. May clamp and cement metal fittings on ends of hose, using rubber cement and hand tools.

8173-238 FLOOR-TILE BACKER(linoleum prod.) DPT:685
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Tends machine that applies removable paper-backing to adhesive-coated floor tiles:

Positions roll of paper in feed rack of machine. Sets machine guides according to size of tile to be backed. Adjusts paper-cutting die to match size of tile. Starts machine and ensures that flow of tile and paper is synchronized.

**8173-299 OTHER COATING AND CALENDERING
OCCUPATIONS, CHEMICALS**

This group includes chemical coaters and calenderers, not elsewhere classified; for example, those who cure industrial belting, tend machines that apply granulated slate and mica to asphalt-coated roofing felt, or spread glutinous material or paint onto cloth, backing material, or floor tiles. Typical examples of occupational titles covered by this residual group definition are:

Coater, Slate(asphalt roof.)
Curing-Press Tender(rubber)
Spreading-Machine Tender(chem., n.e.c.)

**8176-INSPECTING, TESTING AND SAMPLING
OCCUPATIONS: CHEMICAL, PETROLEUM,
RUBBER, PLASTIC AND RELATED MATERIALS
PROCESSING**

This unit group includes occupations in inspecting, testing and sampling work as described under the term titles, 02-170 INSPECTOR (any ind.), 02-430 TESTER (any ind.), 02-330 SAMPLER (any ind.), concerned with quality control activities in chemical, petroleum, rubber, plastic and related materials processing. Occupations concerned with inspecting both food and drugs are classified in Unit Group 8296, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PROCESSING, N.E.C.

**8176-110 CELLULOSE FILM SOLUTIONS TESTER(chem.,
n.e.c.) DPT:364**
GED: 4 SVP: 5 EC: 1 PA: L 4 7

Samples and performs laboratory tests on process solutions used in the manufacture of cellulose film, for purposes of process and quality control:

Collects periodic samples of process solutions such as, coagulating, purification and bleach baths using beakers and bottles. Tests strength of solutions by standardized processes such as titration, coagulation, precipitation and filtration using reagents, test solutions and apparatus such as, flasks, filters, pH meter, thermometer and refractometer. Calculates salt index of viscose solution using saline solution, distilled water and stirrer. Tests strength and quality of incoming chemicals such as sulphuric acid, glycerine, sodium sulphide and hypochlorite bleach. Records results of tests and informs production supervisor of deviation from standard so that solution adjustments can be made. Washes and cleans laboratory equipment.

**8176-112 TEST ANALYST, TITANIUM PIGMENTS(chem.,
n.e.c.) DPT:364**
GED: 4 SVP: 5 EC: 1 PA: L 4 7

Performs any combination of the following laboratory tests on slurries, solutions, liquors and finished product in the manufacture of titanium oxide pigments, to verify conformance to specifications, and to determine chemical and physical characteristics:

Collects samples for test purposes at specified stages of production process, using scoops, buckets or special sampling equipment. Performs standard chemical and physical tests to determine stabilities, iron content, specific gravity, amount of residues and pH readings, using laboratory equipment, such as flasks, retorts, agitators, condensers, filters, thermometer and scales. Places sample in chamber and operates X-ray diffraction and fluorescent unit to measure rutile and anatase content. Prepares small test batches of oil paint, latex paint or plastic by mixing pigments into oil, latex or resin, using laboratory equipment. Performs tests on paint and plastic samples; such as cowles grind test, cowles tinting test, opacity test and plastisol dispersion test to determine physical properties of pigments. Records test results for quality-control purposes, and makes oral reports to process operators.

May make adjustments to calciner, by turning valves, to regulate air and gas flow and temperatures. May be identified according to area of tests performed, or nature of analysis, and be designated accordingly; for example,

Test Analyst, Black Section
Test Analyst, Calciner Control
Test Analyst, Pack

8176-114 TESTER, PLASTIC-MATERIALS(plastic prod.) DPT:382

GED: 3 SVP: 5 EC: 1 PA: L 4 5

Tests sample batches of plastic materials for conformance to manufacturing standards:

Weights and pours amounts of resin, rubber, filler, plasticizer and other ingredients into mixing bowls. Adjusts equipment, such as roll mills and calenders used to process sample batches, by setting clearances between mill and calender rolls. Actuates controls to regulate temperature of equipment. Places sample batch in mixer and mixes for specified time. Runs batch through calender to form sheets. Vulcanizes sheets at specified time and temperature. Cuts strips from sheets, using knife. Performs tests to determine stress and strain properties, flexural strength, abrasion resistance and impact strength, using mechanical-test equipment. Records data, such as temperatures, processing times, batch numbers and test results.

**8176-116 CARBON AND GRAPHITE INSPECTOR(non-
metal. min. prod., n.e.c.) DPT:384**
furnace-and-kiln inspector; furnace-stock inspector.
GED: 3 SVP: 5 EC: 1 7 PA: L 3 4 7

Tests and inspects industrial carbon products before and after baking and graphitizing processes, to determine density, resistance and quality of product:

Marks samples of green stock before graphitization or baking to indicate their position in the furnace. Receives marked samples after processing is complete and furnace is unloaded. Cleans samples with scraper and emery cloth. Weighs and measures samples, using scales, measuring tape and calipers. Places samples on resistance testing device (Wheatstone bridge), turns controls to specified settings, and reads and records resistance of each sample. Calculates averages of density, weight, dimensions and resistance of samples, using charts, slide-rule and formula. Marks balance of furnace lot with resistance grade number. Inspects cleaned stock for pits, cracks, burrs and bends, and grades and marks them accordingly.

8176-118 COMPRESSED-GASES TESTER(chem., n.e.c.) DPT:384
gas-house tester; gas tester.
GED: 3 SVP: 5 EC: 1 6 PA: L 4 7

Tests compressed gases for moisture content, purity, ratio of gases in mixture, and cylinder pressure, by following specified procedures:

Draws gas samples from cylinders or lines. Adjusts test equipment; such as, combustion and absorption tester, burette, conductometer, and pressure gauges, according to gas chart specifications. Records test procedures and results in log. Prepares and places identifying tags on cylinders. Notifies supervisor of deviations from specifications. Tests for presence of explosive conditions in lines, vessels and near operating equipment prior to and following repairs. May test accuracy of calibrations on pressure gauges, using dead-weight tester.

**8176-122 ASPHALT-ROOFING-MATERIALS
INSPECTOR(asphalt roof.) DPT:367**
quality-control inspector.
GED: 3 SVP: 5 EC: 1 PA: H 3 4 7

Tests and inspects samples of asphalt roofing materials for conformance to specifications:

Weights bundles of shingles and rolls of asphalt-coated roofing felt, to verify gross weight with label weight. Examines surface of shingles for colour conformity, and feels surface to determine that granules are evenly distributed. Cuts strips from shingles, using knife, and actuates scratch tester to determine if granules are embedded to specifications. Calculates percentage of granule loss after scratch test, using balance scales, and notifies production operator of results. Measures shingles

as they pass on conveyor, using tape rule. Writes inspection and test reports to record findings.

8176-126 CARGO INSPECTOR(oil & nat. gas; petrol. & coal prod.) **DPT:387**
loading inspector.
GED: 3 SVP: 5 EC: B 6 7 PA: L 2 4 7

Samples and inspects crude or refined petroleum in terminal tanks and ship tanks, to determine if it meets prescribed standards:

Lowers container into tank, or opens bleeder valve on pipeline, to obtain oil or residue sample. Determines amount and type of sediment, water and other foreign substance in sample, using centrifugal tester and following standard formulas. Lowers thermometer into tank to take temperature reading. Determines quantity of oil in ship tanks, using calibrated tape and conversion tables. Inspects tanks and valves to verify suitability to receive cargo. Prepares, verifies or examines bills of lading, export records and transportation and delivery records. Writes daily reports for quality control purposes.

May perform density tests of petroleum, using hydrometer, or viscosity tests, using viscometer. May assist in loading or unloading petroleum.

8176-130 LABORATORY TESTER(petrol. & coal prod.) **DPT:364**
GED: 3 SVP: 4 EC: I PA: L 4 7

Performs chemical tests of a routine nature on petroleum and petrochemical products, to provide control data for processing unit operators:

Assembles and prepares equipment; such as, flasks, retorts, agitators, columns, condensers, filters, pyrometers, thermometers and burners. Tests processing unit samples and calculates percentages of ingredients, by procedures such as, distillation, filtration, purification, titration, extraction and fractional distillation. Tests samples, to determine such factors as, specific gravity, viscosity and asphalt penetration. Records test results for quality control purposes, and makes oral reports to process operators. Tends equipment; such as, hotplate, Bunsen burner, electric furnace and electric oven, to dry or treat materials. Washes or cleans bottles and other laboratory equipment.

8176-134 RUBBER TESTER(rubber) **DPT:384**
millroom tester.
GED: 3 SVP: 4 EC: I PA: L 4 7

Tests physical properties of milled rubber compounds for conformance to specifications:

Collects samples of rubber compounds from millroom at prescribed intervals. Mixes and blends sample stock in laboratory warmer mill to obtain desired consistency, and tests sample for plasticity, using plastometer. Cures rubber samples in heated mould at specified temperature for designated time, and tests for hardness, using durometer. Determines density of cured and uncured stock by weighing samples on scale, and testing sample in densimeter. Records test results for process control purposes.

8176-138 COKE SAMPLER AND TESTER(petrol. & coal prod.) **DPT:464**
GED: 3 SVP: 3 EC: I 7 PA: L 2 4 7

Samples and tests coke, coke products and by-products for process control, by performing any combination of the following duties:

Collects samples at specified points in coking, calcining or carbon processing. Crushes sample in laboratory crusher and makes screen analysis of product, using vibratory or hand screens. Weighs screen samples to determine such factors as density and friability. Dries sample in oven, and reweighs it to determine moisture content. Prepares samples of coke, tar and other ingredients, by mixing and blending in test apparatus, for trial and analysis purposes. Measures electric resistance of mixed sample (paste), using ohmmeter. Collects samples of liquid and gaseous coke by-products, and labels them according to type and source for laboratory analysis. Calculates test results, using standard formulas, graphs and slide rule. Informs unit operators of test results. Records and maintains files of test results.

8176-142 MILL-ROLL TESTER(chem., n.e.c.) **DPT:564**
plastic-film tester.
GED: 3 SVP: 3 EC: I PA: L 4 7

Samples and tests plastic film for conformance to quality standards: Collects samples of film being produced by machines. Trims sample to specified size, using papercutter. Weighs on balance scale and records weight. Smells sample to detect odour which signifies defective processing. Measures thickness of film, using electronic device. Places sample on illuminating table and examines it for defects, such as, bubbles, wrinkles and streaks. Informs machine operator of test results.

8176-146 SPONGE-RUBBER INSPECTOR(rubber) **DPT:664**
rubber-sheet inspector.
GED: 3 SVP: 3 EC: I PA: M 4 7

Inspects sponge-rubber sheeting at discharge end of moulding and curing machine:

Inspects material for defects; such as, tears, breaks, lumps, streaks and blisters, as material winds onto take-up core. Cuts out defective sections, using hand knife or shears. Cuts samples from ends, and measures thickness, using dial micrometer. Tests compressibility by squeezing sample in testing device, and records maximum compression pressure. Wraps paper around roll of sheeting and weighs on scale. Grades and marks each roll according to length and number of breaks, and enters data on form. Notifies machine operator of defects. May cut out areas containing minor defects, using mallet and cutting die, and cement patch in place. May butt-join cut ends, using adhesive tape, or by cementing ends together, using brush and latex cement.

8176-150 DIELECTRIC TESTER(chem., n.e.c.; rubber) **DPT:665**
GED: 3 SVP: 3 EC: I PA: M 4 7

Tests rubber or plastic sheet or tape for electrical insulation defects:

Loads roll of sheet or tape stock on feed rolls of dielectric testing machine, using hoist. Feeds end of stock through machine guides, electrically-charged testing rollers, static discharge brushes and onto wind-up device. Sets testing mechanism for type and thickness of stock being tested. Starts machine and observes stock moving through test. Stops machine when horn sounds, indicating a defect has been found. Cleans area of defect with solvent, and applies cement, using brush and pre-cut patch. Retests repaired area, using portable gun-type tester. Records number of repairs made and length of stock tested. Informs quality-control supervisor if excessive defects are found.

8176-154 RECLAIMED-RUBBER INSPECTOR(rubber) **DPT:587**
slab inspector.
GED: 2 SVP: 3 EC: I PA: M 4 7

Inspects slabs of reclaimed rubber for defects and conformance to standards:

Inspects and feels slabs for defects; such as, lumps, roughness, ragged edges and irregular colour. Cuts lumps and foreign matter from acceptable slabs, using knife. Loads accepted and rejected slabs on respective pallets. Weighs loaded pallets on scale, and records weights on acceptance or rejection tag. Sorts slabs into specified grades to fill customer orders.

May cut samples from slabs for laboratory analysis, and record test results on stock identification tags, for classification and routing purposes.

8176-158 SAMPLEMAN(chem., n.e.c.) **DPT:587**
GED: 2 SVP: 3 EC: B 7 PA: L 2 4

Collects samples of industrial chemicals and chemical products, for laboratory analysis and process-control purposes:

Collects samples from such places as storage bin, railroad car, mixing, blending or processing unit or bagging area, using auger, scoop, metal or glass container. Places sample in bottle, bag or other container, and attaches identifying information, such as date, source and nature of contents. Enters record of sample in log and delivers sample to laboratory for analysis.

May manually blend samples as required. May relieve operators of process equipment as required. May be designated according to type of material sampled; for example,

Sampleman, Acid
Sampleman, Fertilizer

8176-162 SAMPLER(petrol. & coal prod.) DPT:587
GED: 2 SVP: 3 EC: 0 PA: L 2

Collects samples of petroleum products, during processing and in storage, for laboratory analysis:
Obtains samples from vats, tank cards, processing units, stills and pipelines by lowering sample bottle or metal container into contents at various depths, or by opening bleeder valves to release flow of products into containers. Pours samples from containers into sample bottles. Ties identification tags to bottles or marks identifying information on them. Delivers sample to laboratory for analysis. Records collection time, nature of contents and source of each sample in log.
May drive truck to gather samples.

8176-166 ROLL INSPECTOR, PLASTIC FILM(chem., n.e.c.) DPT:667
slit-roll inspector.
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Examines finished rolls of cellulose film for defects, and verifies accuracy of roll labels:
Observes and feels rolls passing on conveyor to detect defects, such as, wrinkles, streaks or torn edges. Measures width and diameter of rolls, using tape measure. Compares identification labels with specifications to ensure correct labelling. Removes rejected rolls from conveyor. Keeps record of quantities of accepted and rejected rolls. Reports recurrent defects to foreman.

8176-170 INSPECTOR, VINYL FABRICS(plastic prod.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects vinyl fabrics for defects; such as, turned edges, off colour, coating scratches and wrinkles:
Pulls end of fabric from roll on let-off rack across inspection table. Moves metal plate between rollers on wind-up rack to align vinyl fabric, and to facilitate insertion of cardboard core. Winds fabric around roll, and depresses pedal to start material moving across inspection table. Examines material to detect any defect in print, colour and relief. Cuts fabric in specified lengths as indicated by dial following table guide lines and using scissors. Writes code number and length of material on roll.

8176-199 OTHER INSPECTING, TESTING AND SAMPLING OCCUPATIONS: CHEMICAL, PETROLEUM, RUBBER AND PLASTIC PROCESSING

This group includes chemical, petroleum, rubber, plastic and related materials processing inspectors, testers and samplers, not elsewhere classified; for example, those who test special grades of alumina, sample batches of plastic materials, inspect plastic sheets for imperfection in product, and test dispersing qualities of lacquer. Typical examples of occupational titles covered by this residual group definition are:

Alumina Tester(chem., n.e.c.)
Disperser Tester(paint & varn.)
Plastic-Materials Sampler(plastic prod.)
Plastic-Sheet Inspector(plastic prod.)

8178-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING

This unit group includes occupations in labouring or other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), concerned with feeding, offbearing and handling activities in the processing of chemicals, petroleum, rubber, plastic, and related materials.

8178-110 LABOURER GENERAL, CHEMICAL PLANT(chem., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: B 7 PA: H 4

Performs any combination of the following tasks in a chemical processing plant:
Unloads materials from vehicles and containers by shovelling, dumping, scooping materials, or opening flow valves. Delivers bulk or packaged materials to other workers or processing areas, using hand truck, hoists, conveyors or wheelbarrow. Selects, measures out and weighs materials according to requisition instructions. Dumps ingredients into mixers, blenders, kettles, mills or feed hoppers. Opens valves to heat, cool or agitate chemical compositions or solutions. Obtains and delivers samples to laboratory for testing. Fastens caps or covers on containers, and stencils, paints or attaches labels to them. Cleans machines, processing equipment and work areas, using brushes, scrapers, detergents and air or water hose. Fills containers with processed material. Loads containers into trucks or railcars for shipping.
May operate industrial truck to move containers and materials.

8178-114 LABOURER GENERAL, PETROLEUM REFINERY(petrol. & coal prod.) DPT:687
GED: 2 SVP: 2 EC: 0 3 5 6 7 PA: H 2 3 4

Performs any combination of the following tasks in an oil refinery:
Digs ditches and repairs roads. Cleans equipment and work areas. Loads or unloads trucks or freight cars and uncrates equipment. Changes hoist cables and rigs chain hoists, rope blocks, power winches and gin poles, used to move or raise equipment. Dumps chemicals and catalysts into tanks as directed. Paints pipelines and structures, using brush or spraying apparatus.

8178-118 GUIDER(linoleum prod.) DPT:666
GED: 1 SVP: 2 EC: 1 7 PA: M 4 7

Feeds and guides floor covering material into rollers that convey it through saturation, coating and curing machines:
Pushes sheet material onto rollers that convey it through saturating, coating, consolidating or air-drying machines. Observes material to detect defects or misalignment with marginal markings on roller guides, and aligns material by hand. Signals lacquering-machine operator when to lift coating rollers to avoid coating defective areas.

8178-122 STOVE-CARRIAGE MAN(linoleum prod.) DPT:666
stove hanger
GED: 1 SVP: 2 EC: 1 PA: VH 4 6 7

Feeds and drapes floor covering in hanging racks of curing stoves, working as member of a team:
Turns crank to position stove carriage over hanging-rack battens. Moves controls, in response to signals from other workers, to feed uncured coated floor covering onto hanging rack, and to form bights (loops) in vertical draped convolutions of material. Places spacing strips over battens to form cushions for additional layers of floor covering.

8178-126 STOVE-BOTTOM MAN(linoleum prod.) DPT:667
GED: 1 SVP: 2 EC: 1 6 PA: L 4 5 7

Checks convoluted draping of floor-covering in curing process:
Observes folded lengths of floor covering hanging in loops in stoves, and signals other workers at top of stoves to adjust length of curves for required spacing. Covers floor of stove with paper to prevent dips from touching floor. Places cone (hollow cylinder) inside each bight (loop) to prevent kinking and to separate faces of floor covering.

- 8178-130 ELECTRODE CLEANER**(chem., n.e.c.; electric equip.) DPT:686
GED: 1 SVP: 2 EC: I 7 PA: M 4

Cleans surface of graphitized electrodes to remove encrusted carbon, using either of the following methods:

1. Pushes electrode on roller conveyor into cleaning machine. Starts machine to rotate electrode against wire brushes that remove excess carbon. Stops machine when cleaning is completed and removes electrode from machine. 2. Scrapes loose material from electrode surface, using chipping hammer, scraper and abrasive materials. Examines cleaned electrodes to ensure removal of surplus carbon.

- 8178-134 GASKET COATER**(asbestos & min. wool) DPT:686
GED: 1 SVP: 2 EC: I PA: L 4

Feeds and offbears machine that coats asbestos gaskets or sheets with rubber compound:

Attaches asbestos gaskets or sheets to rod in machine that automatically dips them into liquid rubber to acquire protective coating. Removes coated gaskets or sheets from machine and places them in electric drier.

- 8178-138 RACKMAN**(linoleum prod.) DPT:686
GED: 1 SVP: 2 EC: I 7 PA: H 2 3 4

Loads floor covering onto drying-oven racks, working as a team member:

Threads pull-in cable and clamp through slots to front of rack. Attaches clamp to end of linoleum sheet protruding from printing machine, and starts winding machine to draw floor covering onto rack. Stops winding machine and detaches clamp and cable from floor covering, using wrench. Repeats operation until drying rack is filled. May help printer to set up printing blocks in machine. May clean dried paint from printing machine and blocks.

- 8178-142 REELER**(asphalt roof.) DPT:686
GED: 1 SVP: 2 EC: I 5 7 PA: M 4 7

Feeds asphalt-coated roofing felt into machine that winds rolls to specified dimensions:

Threads felt through feed rollers by hand and inserts end in take-up reel. Adjusts alignment of sheet on winder and sets automatic yardage counter. Presses button to start winder that automatically weighs and ejects completed roll after specified weight has been wound. Observes felt and cuts out defects, such as tears, holes or splices. Depresses pedal to actuate knife that severs completed roll from continuous feed, or cuts sheeting by hand, using knife, after specified weight has been attained.

- 8178-146 SIFTING-MACHINE FEEDER**(rubber) DPT:686
GED: 1 SVP: 2 EC: I 5 7 PA: H 3 4

Feeds sifting machine that breaks up or screens out lumps and foreign material in ingredients used to make rubber compounds:

Pours specified ingredients from containers into machine hopper. Starts sifting machine that uses vibrating screens to sift ingredients and discharge them into containers. Stacks containers onto hand truck or pallet and identifies material by affixing labels. May feed machine that sifts and discharges ingredients into chute leading to holding bin.

- 8178-150 SLUG-PRESS FEEDER**(chem., n.e.c.) DPT:686
GED: 1 SVP: 2 EC: I PA: M 3 4

Feeds machine that compresses moist welding-rod-coating mix into cylinder-shaped slugs:

Breaks up cakes and dumps mix into forming chamber of slug-press, using pick, fork and shovel. Presses button to close press and actuate ram that automatically forms and ejects slugs. Slips plastic bag over slug or places it in container to prevent crusting or dehydration. Cleans machine, using brush, scraper and air hose.

- 8178-154 SPLICER**(linoleum prod.) DPT:686
GED: 1 SVP: 2 EC: I 5 7 PA: M 4 7

Splices rolls of felt paper to provide continuous sheeting for use in production of hard surface floor covering, working as member of team:

Positions roll of felt paper on stand, using hoist. Cuts ends of material with hooked knife, and attaches ends to new roll, using tape. Pushes buttons that operate festoon device to maintain continuous operation during splicing. Examines material for kinks and tears. Pours paint into wet-body well to lubricate felt paper prior to printing. Cleans work area and equipment, using solvent and brushes.

- 8178-158 SPREADER-OPERATOR HELPER**(plastic prod.; rubber) DPT:686
GED: 1 SVP: 2 EC: I 6 7 PA: M 4

Helps spreader-machine operator to coat or impregnate fabrics with thermoplastic material, by performing any combination of the following duties:

Moves rolls to and from machine and scales, using hoist. Helps operator to mount rolls on machine and thread fabric through machine rollers and on to take-up reel. Sews leader onto fabric, using sewing machine. Fills liquid cement tank and adjusts valves and spreader blade to regulate flow. See also definition for term title, 02-160 HELPER (any ind.)

May record weight of coated material.

- 8178-162 BULLET-LUBRICANT MAN**(explosives) DPT:687
bullet-lubricant mixer.
GED: 1 SVP: 2 EC: I 5 6 PA: L 3 4

Melts wax and other ingredients to make compound for lubricating lead bullets:

Weights specified amount of ingredients, such as wax and oils, and loads them into kettle manually. Turns valve to regulate heat, and stirs mixture with wooden paddle. Drains melted compound from kettle into moulds. Empties cooled moulds and moves cakes into storage bins, using hand truck. Conveys cartridge component parts, such as shells, heads and bullets to production departments to fill requisitions. Lubricates and packs parts into containers.

May inspect parts for general appearance, defects and gauge, using micrometers and fixed gauges.

- 8178-166 COMPRESSED-GAS-PLANT WORKER**(chem., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: I 6 7 PA: H 4 7

Performs any combination of the following duties in compressed and liquefied gas plant:

Rolls cylinders onto vehicles and records type and quantity of cylinders. Examines returned cylinders for surface defects, such as dents, cracks and burns, and rolls cylinders to designated work area. Connects exhaust manifold to cylinders and turns valves to draw off residual gas. Cleans exterior of cylinders, using wire brush to loosen rust and scale. Inserts nozzles into cylinders and turns valves to admit water, steam and air to scour and dry interior of cylinders.

May weigh filled cylinders on platform scale and record weight.

- 8178-170 ELECTROLYTIC-CELL CLEANER**(chem., n.e.c.; non-ferrous metal) DPT:687
cell flusher.
GED: 1 SVP: 2 EC: I 4 5 6 7 PA: M 4

Cleans electrolytic cells to remove scale accumulation and prevent blockages, by performing any combination of the following duties:

Connects water hose or steam lines to orifices of cell to flush pipe lines, pumps and drip cups. Skims accumulated chemicals from cell ends and side outlet boxes to prevent blockages and collect materials for further treatment, using scoop. Scrapes underside of cell covers and anodes to remove dirt, scale, and encrusted salt, using hand scrapers and wire brushes. Washes exterior of cells and pipe lines to remove caked dirt. Cleans cell interior, using scraper and water hose. Transfers cathodes to and from washrack, using wheeled cart, hoist or chain block. Covers pans with water to prevent evaporation of volatile materials. Flushes cathodes and screens to remove residue. Cleans sight glasses and glass tubing by dipping in acid, solvent and water.

8178-174 PAINT POURER, LINOLEUM(linoleum prod.) DPT:687
GED: 1 SVP: 2 EC: I 5 7 PA: M 2 3 4 7

Pours paint in troughs of machine that prints colours and designs on linoleum:

Mixes paint to attain required viscosity, using electric mixer. Pours paint in troughs of machine, and replenishes during printing operation as required.

May wash printing blocks and machine troughs, using solvent. May assist in setting up printing blocks to change printing patterns. May mix paint to attain required colour.

8178-178 WAX-POT TENDER(iron & steel) DPT:687
GED: 1 SVP: 2 EC: I 6 PA: M 3 4

Melts wax for use in lost wax casting process:

Breaks slabs of wax, using sledge hammer, and deposits them in melting pot, manually or using shovel. Adjusts thermostat to maintain specified temperature of liquid wax. Dips wax from melting pot, using hand ladle, and pours it into receiving pot, preparatory to pouring into mould.

8178-182 WHARFMAN, COKE PLANT(iron & steel; petrol. & coal prod.) DPT:867
coke-conveyor tender.
GED: 1 SVP: 2 EC: 0 4 7 PA: M 4 7

Receives hot coke on wharf and controls flow of coke onto conveyor belt:

Signals other worker to dump coke onto wharf. Quenches hot spots in dumped coke to prevent burning of conveyor belt, using water hose. Pushes and pulls levers to control flow of coke from wharf onto conveyor belt for screening. Shovels spilled coke onto conveyor.

May operate signal lamp to indicate when to start and stop conveyor. May clean work area, using broom and shovel.

8178-186 CALENDER FEEDER(plastic prod.; rubber) DPT:886
GED: 1 SVP: 2 EC: I 3 4 6 7 PA: H 4

Feeds milled plastic or rubber stock into calendering machine to produce smooth sheeting of specified thickness:

Lifts roll of stock from warm-up mill, using hoist. Inserts mandrel through centre of roll, and mounts roll on feed end of calendering machine. Feeds end of stock between heated calendering rollers. Assists operator to turn capstan wheel that adjusts rollers to produce sheeting of specified thickness. Returns pieces of scrap to warm-up mill.

May assist operator to change rollers, using block and tackle. May connect steam line to rollers, using wrenches. May mount roll of backing material in cradle and feed it through rollers to be faced with rubber or plastic.

8178-190 COATING-MACHINE FEEDER(any ind.) DPT:886
GED: 1 SVP: 2 EC: I 7 PA: L 4

Feeds materials, such as leather, plastic, foam rubber or cloth, into machine that coats materials with adhesive:

Covers one side of material with protective sheet and feeds material through machine rollers or revolving brush to coat exposed surface. Fills reservoir with adhesive as required.

May carry material to coating machine from storage area. May apply adhesive to materials by hand. May assemble coated parts and package articles.

8178-194 SLASHER HELPER(chem., n.e.c.) DPT:886
GED: 1 SVP: 2 EC: I PA: M 4

Helps slasher operator to cut cellulose film to specified lengths:

Transports rolls of film from storage, using hand truck. Helps operator to position roll on roll stand. Splices breaks in film, using tape and heat-sealing iron. Turns handwheel on large drum, to unreel material onto cutting table. See also definition for term title, 02-160 HELPER (any ind.).

8178-198 WAX MOULDER(petrol. & coal prod.) DPT:886
GED: 1 SVP: 2 EC: I 6 PA: M 4

Casts petroleum wax to form moulded wax cakes:

Opens valves to fill moulds with molten wax. Places moulds on conveyor that moves moulds through chilling compartment to solidify wax.

May move controls to heat wax to pouring point or to maintain specified temperature in chilling area. May load wax cakes into curing autoclave. May unload wax cakes from moulds.

8178-202 LABOURER, PAINT PLANT(paint & varn.) DPT:887
GED: 1 SVP: 2 EC: I 5 7 PA: H 3 4

Performs any combination of the following duties involved in the production of paints and varnishes:

Dumps calcined and metallic pigments into hopper of automatic grinder to reduce pigments to powdered form. Pumps pigment slurries and paints through filters to remove lumps and impurities. Fills cleaning tank with water and caustic, and turns steam valve to heat tank. Places equipment to be cleaned, such as pails, chutes, and mixing pans, in tank. Removes equipment from cleaning tank after specified time, and rinses equipment, using water hose. Unloads drums, barrels and raw materials from freight cars and trucks, and stacks them in warehouse or work areas. Cleans work areas, using broom, rags and solvent.

8178-206 LUTERMAN(petrol. & coal prod.) DPT:887
GED: 1 SVP: 2 EC: 0 3 6 7 PA: M 3 4

Seals coke-oven doors with lute to prevent escape of gases during coking of coal, by performing any combination of the following duties:

Mixes mud, clay, coke-ashes and water to make lute, using bucket and rod. Shovels lute into pails, and carries them to ovens. Chips old lute, carbon and residue from oven doorway, using chisel. Seals crack around oven door with lute, using trowel and tamping bar. Shovels excess lute, oven spillage and coal from working area. Opens and closes chuckhole door, damper and steam valve, as directed.

May turn valve to spray water on hot coke moving through cooling shed on conveyor. May open gates manually to allow coke to slide from chute onto conveyor for loading into railway car and be designated accordingly.
Lidman

8178-210 SCREEN CLEANER(rubber) DPT:887
GED: 1 SVP: 2 EC: I PA: L 4

Cleans and repairs screens used for reclaiming rubber:

Brushes rubber particles and other foreign material from metal screens. Softens embedded material with solvent, and wipes screens with cloth. Removes dents and straightens screens, using hammer. Repairs holes in screens by cutting screen patches to size and riveting them to screen

8178-214 TAR CHASER(petrol. & coal prod.) DPT:887
tarman.
GED: 1 SVP: 2 EC: 0 6 7 PA: H 2 4

Removes tar, pitch and carbon accumulated in coke-oven-collecting mains:

Lifts plugs from collecting main, using hook. Places disk over plug hole, and shoves chisel bar through center hole of disk. Twists bar to pry tar from walls of main. Removes tar and pitch from traps, using spooning bar. Sweeps and cleans work area.

May burn tar from walls and traps, using gas flame. May open and close valves to regulate flow of tar into collecting tanks. May tend electric pump to transfer tar from collecting tank to railroad tank cars.

8178-218 SCRAP-RUBBER GRINDER AND DUMPER(rubber) DPT:886
GED: 1 SVP: 1 EC: I 7 PA: M 3 4

Loads, grinds and dumps reclaimed rubber:

Opens bales of scrap rubber stock, such as tires, tubes or rubber mats. Loads stock into pans for grinding or devulcanizing. Moves pans or loaded skids to processing area. Feeds pieces of scrap rubber into

machine that grinds them into pulverized form for pillow filling or further processing. Dumps pans of ground or devulcanized rubber into storage bins, mixing machine or chute. May blend oil or carbon black into ground rubber. May adjust temperature in mixing mill by turning steam valve. May change choked filter screens.

8178-299 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, CHEMICALS, PETROLEUM, RUBBER AND PLASTIC PROCESSING

This group includes chemicals, petroleum, rubber and plastic processing labourers and other elemental workers, not elsewhere classified; for example, those who tie protective cotton caps over igniter end of propellant charges of artillery shells, shovel charcoal from retorts onto conveyors for shipping, dump coal or limerock into hoppers that feed limestone kilns, shakers or hammer mills, heat and filter pitch used to block optical lens blanks, and cut plastic and rubber stock into slabs, using guillotine-type machine. Typical examples of occupational titles covered by this residual group definition are:

Banbury-Takeoff Man(plastic prod.; rubber)
Hopper Man(petrol. & coal prod.)
Igniter Capper(explosives)
Pitch Worker(scient. & ind. equip., n.e.c.)
Retort Unloader(petrol. & coal prod.)
Towerman(pulp & paper)

8179-CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned primarily with operating and tending equipment to process chemicals, petroleum, rubber, plastic and related materials.

Chemical Processing Operators and Tenders

8179-110 through 8179-142

8179-110 CHIEF OPERATOR, CONTINUOUS PROCESS(chem., n.e.c.) DPT:162
GED: 4 SVP: 8 EC: B 5 6 7 PA: L 2 3 4 5 6 7

Co-ordinates, directs and controls operation of continuous chemical process equipment systems from control panel or other control station: Monitors recording instruments, flowmeters, panel lights and other indicators, and listens for warning signals and sounds to verify process conditions and conformance to plant standards of safety and efficiency. Co-ordinates operation of various units in the system to assure production requirements, referring to run sheets, test books, operating manuals and log books. Interprets chemical reactions by recording instrument readings, process conditions and operating data in shift log. Calculates material requirements or product yield from standard formulas, using slide rule. Adjusts control settings or notifies unit operators to make control adjustments on equipment units affecting speed of chemical conversion, output quality and product yield. Confers with engineering and technical personnel to report or resolve conditions affecting safety, efficiency and product quality. Manually regulates or bypasses malfunctioning equipment and adjusts conditions to produce alternate streams. Maintains equilibrium of systems until equipment function is restored.

May perform supervisory duties in the absence of a foreman. May be designated according to conversion system co-ordinated; for example, Chief Operator, Alkylation
Chief Operator, Aromatization
Chief Operator, Diazotization
Chief Operator, Hydrogenation
Chief Operator, Hydrolysis
Chief Operator, Isomerization
Chief Operator, Nitration

Chief Operator, Polymerization
Chief Operator, Pyrolysis
Chief Operator, Reformation
Chief Operator, Synthesis

8179-114 CHIEF OPERATOR, BATCHING PROCESS(chem., n.e.c.) DPT:162
GED: 4 SVP: 7 EC: I 5 6 7 PA: L 4 6 7

Co-ordinates and participates in activities of operators engaged in single or multi-step batching processes, using manually operated or semi automatic equipment that converts chemical substances into industrial or consumer products:

Obtains list of output requirements from supervisor and organizes chronological production steps. Schedules sequence of processing for batching of raw materials. Directs activities of operators controlling batching equipment. Observes chemical reactions, monitors gauges, signals and recorders to assess state of conversion. Turns valves or resets controls to maintain process equilibrium during critical stages. Identifies irregularities in processing procedures and takes corrective action to maintain operating efficiency. Patrols area to detect malfunctions of equipment. Performs minor maintenance, using hand tools and arranges for major or urgent repairs. Maintains shift log by compiling recorded information, such as test results and chart readings from individual unit log sheets. Provides continuity of information and process standards from one shift to the next. Trains new workers in safe, correct working procedures, handling and processing of chemicals, and the nature of chemical reactions on a variety of equipment.

8179-118 OPERATOR, CATALYTIC CONVERSION(chem., n.e.c.) DPT:162
converter-unit operator.
GED: 4 SVP: 7 EC: B 5 6 7 PA: L 2 3 4 5 6 7

Co-ordinates operation of continuous catalytic converter units to alter chemical compositions of liquid or gaseous substances according to knowledge of processes and sequence of operations:

Operates controls to admit feed stocks to converter units at specified rates and recycle unreacted products or by-products to auxiliary equipment. Monitors rate, time and extent of reaction and adjusts controls to regulate temperatures and pressures according to gauge readings and chart recorders. Maintains efficient operation within specified limits according to operating manuals and processing requirements. Operates auxiliary equipment; such as, heaters, scrubbers, vapour compressors, filters, distillation units, condensers and humidifiers to prepare, or further process, materials. Controls equipment to purge and reuse catalyst. Patrols area to inspect equipment for leaks and other hazards. Listens for abnormal sounds and observes equipment to detect malfunction. Performs minor repairs and maintenance, such as changing catalytic screens. Records gauge readings, draws and marks samples for laboratory analysis. Sets up and operates alternate product streams to bypass malfunctioning equipment. Maintains log of gauge and on-stream analyzer readings, shift production and equipment performance. Analyzes test results, laboratory analyses and instrument readings to assess process yield, facilitate regulation of production and to detect malfunctions.

May demonstrate correct work methods to trainees. May be designated according to system operated or product produced; for example, Alkylation Operator
Dehydrogenation Operator
Hydrogenation Operator
Isomerization Operator
Polymerization Operator
Synthesis Operator

8179-122 OPERATOR, CHEMICAL PROCESS UNIT(chem., n.e.c.) DPT:162
GED: 4 SVP: 7 EC: B 5 6 7 PA: L 2 3 4 5 6 7

Co-ordinates operation of continuous-systems units that convert chemical substances into specified industrial or consumer products according to knowledge of operating procedures and chemical

reaction, laboratory test results and correlation of instrumentation data:

Reads plant specifications to ascertain product ingredients and any prescribed modification of plant procedures. Moves controls to regulate flow of liquids and gases through equipment in specified timing or sequence or starts automatic feed of solid or semisolid materials through equipment, such as heating vessels and mixing tanks. Observes gauges, signals and recording instruments. Turns valves and moves controls to regulate temperatures, pressures and flow of steam, coolant and chemical constituents through system to reflect prescribed reaction, within critical limits. Patrols area to inspect equipment for leaks and other hazards. Listens for abnormal sounds. Performs minor repairs and records gauge readings. Draws samples at prescribed stages of synthesis and performs titrimetric, titration refractometer, gas analysis and other routine tests to determine if reaction is conforming to plant standards. Maintains log of gauge readings, shift production and equipment malfunctions. Analyzes test results, laboratory analysis and instrument readings to facilitate regulation of process and production of standardized product.

May demonstrate correct work methods to trainees. May control equipment; such as, stripping, wash or recovery towers, neutralizers, condensers, heat exchangers and reflux systems to remove or recover solvents or other specific chemicals. May be designated according to type of system operated; for example,

Absorption Operator
Acidizing Operator
Esterification Operator
Fermentation Operator
Halogenation Operator
Hydrolysis and Hydration Operator
Ion Exchange Operator
Neutralization Operator
Nitration Operator
Oxidation Operator
Purification and Reaction Operator
Thermal Cracking Operator

8179-126 CHEMICAL-PROCESS OPERATOR, BATCHING(chem., n.e.c.) DPT:562
GED: 3 SVP: 6 EC: I 5 6 7 PA: M 2 4 7

Controls one or more chemical processing units or interrelated semi automatic systems; such as, autoclaves, dryers, grinders, kettles, precipitators, reactors, stills, vacuum blenders or mixing vessels in a single or multi-step batching process that convert substances into industrial or consumer products:

Reads plant specifications to ascertain product ingredients and prescribed modifications of basic plant procedures. Charges vessels with specified quantities of solids or liquids, and turns valves to feed liquid or gaseous materials into units, or sets controls in specific sequence on panelboard to start automatic feed. Adjusts valves or moves controls to maintain specified temperature, pressure and vacuum levels. Monitors gauges, signals, recorders and observes colour changes in product to ascertain rate of reaction. Performs simple, physical or chemical tests on products during processing, to ensure conformance to specifications, using standard test equipment and procedures. Collects and identifies samples of product by standard methods for detailed laboratory analysis. Receives notification from control laboratory, supervisor, or other workers to make specified operating adjustments, required to control or complete chemical processes. Maintains log of operating conditions for correlation of chemical processes and shift production.

May use catalysts, accelerators, and short stops to advance, retard and control time, rate and extent of reaction. May be known by type of equipment operated or activity performed and be designated accordingly; for example,

Blender Operator
Still Operator

8179-130 SULPHONATOR(chem., n.e.c.; soap) DPT:582
GED: 3 SVP: 6 EC: I 7 PA: L 4 7

Controls chemical processing equipment to heat animal or vegetable oil to produce water-soluble fat liquor for use in leather tanning, textiles or detergent base stock, by performing any combination of the following duties:

Reads production order to determine materials to be used and method of processing. Opens valves and starts pumps to transfer base materials, such as sulphuric acid, alkyl benzene and animal or vegetable oils to weighing tanks. Transfers specified quantities of

chemical ingredients into sulphonator. Starts agitators and flow of refrigerant in cooling coils to reduce exothermically generated heat. Operates pumps and valves to transfer sulphonic acid to wash tanks, meter fatty alcohol to control wash cycle, transfer compound to settling tank and to run off spent acid from settled solution. Prepares neutralizing solution by mixing controlled quantities of water and caustic alkali. Opens valves to feed sulphonic acid into caustic solution to form detergent paste and starts pump to transfer paste to storage tanks for further processing into powdered detergent. Concentrates sulphonic acid by removing impurities, using steam vacuum ejector unit, and pumps acid through deodorizer to tanks for production of liquid detergent. Draws off samples of solutions at specified process points for laboratory testing. Records gauge and chart readings and maintains production log.

8179-134 OPERATOR, CHLORINATION PLANT(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 6 7 PA: L 4 7

Controls operation of equipment in which chemicals or other materials are chlorinated by reaction with chlorine gas:

Loads chlorinator with specified amounts of chemicals or other materials by operating equipment, such as pumps or conveyors. Turns valves and reads flowmeter to regulate flow of chlorine and rate of chlorine reaction. Reads temperature gauges and adjusts steam and coolant valves to maintain chemical reaction within specified temperature range. Tests sample of chemical product for specific gravity, boiling or freezing point, using laboratory test equipment. Looks through sightglass to detect colour change that determines when chlorination is completed. Maintains record of shift production and other data, such as chlorinator temperature and pressure.

May operate related equipment; such as, vaporizer, filters, stills and stripping columns.

8179-138 PILOT-PLANT TENDER(chem., n.e.c.) DPT:385
GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Performs routine testing and processing duties in a chemical pilot plant:

Turns valves and switches to pump chemical solutions through various processing units, such as reactors, distillers and scrubbers. Adds reagents and catalysts to solutions as directed. Patrols equipment and draws samples at specified processing stages. Carries out standardized tests, such as titration, pH level, concentration and specific gravity, using a variety of test apparatus. Reads charts and gauges and compiles process operational data.

May control processing equipment, such as coagulators and dryers by regulating temperatures, pressures, rates of flow and liquid levels. May clean and maintain equipment, using hose, detergents and hand tools.

8179-142 ALUM-LIQUOR-PLANT OPERATOR(chem., n.e.c.) DPT:562
GED: 3 SVP: 4 EC: I 7 PA: L 4 7

Controls equipment to produce alum liquor (aluminum sulphate) in continuous process reaction of sulphuric acid with powdered bauxite:

Directs other workers to start conveyors to transfer bauxite into hopper of crusher. Manipulates valves and presses switches to start crusher, mill and conveyors to replenish storage supply of powdered ore. Observes meters, vacuum gauges and level indicators. Turns valves to regulate flow of materials, such as powdered ore, sulphuric acid, and hot air to produce mixture of prescribed specific gravity, and through other digesters where chemical reaction occurs and resultant aluminum sulphate liquor is settled and diluted to specified concentration. Draws and tests samples from each digester to verify specific gravity and temperature, using hydrometer and thermometer, or forwards samples to laboratory for tests. Turns valves to adjust flow of steam through digester jackets to regulate temperatures. Pumps processed alum liquor into storage tanks for subsequent use or further processing. Records temperatures, specific gravities and flow rates of materials in operating log, and level of alum liquor in storage tanks on inventory records.

May operate dust collecting equipment to recover dust from crusher.

8179-162 REAGENT MIXER, CELLULOSE FILM(chem., n.e.c.) DPT:462
GED: 3 SVP: 5 EC: 1 4 5 7 PA: M 4 7

Controls equipment to mix and transfer chemicals used to coagulate viscose solution into transparent cellulose film:

Starts pumps, mixers, and evaporators that mix bath chemicals; such as, sulphuric acid, sodium sulphate, softener and bleach to form chemical solutions of precise composition. Observes gauges and controls factors; such as, pressure, temperature, flow rates and acidity to ensure that chemical solutions of specified strength are produced. Performs mathematical calculations to determine efficiency of evaporating unit and to define cause of faulty operation or production of sub-standard solution. Turns valves to transfer solution to storage or circulation tanks. Obtains solution samples for laboratory analysis. Maintains operating log, detailing conditions, such as temperatures, acidity levels and specific gravity. Advises film casting machine operators of variations in solution strength or composition so that mechanical adjustments can be performed.

8179-166 CELLULOSE-FILM CASTER(chem., n.e.c.) DPT:665
GED: 3 SVP: 4 EC: 1 4 7 PA: L 2 4 7

Tends equipment to pump viscose from storage tanks and force it between adjustable metal bars into acid bath to coagulate fluid and form continuous sheet of cellulose film:

Pumps chemical solutions to or from casting machines and storage tanks. Presses switches, turns valves and starts pumps to force viscose fluid between metal bars and into acid bath that coagulates fluid into continuous sheet of cellulose film. Adjusts gap between bars, using wrenches, to produce film of desired thickness. Threads film between rollers, using hook, cable and lead weights and smooths sheet to remove slack and wrinkles. Regulates metering pump settings and chemical solution strengths by reading gauges and moving valve handles to produce film of specified strength and quality. Observes moving film sheet to detect defects in film or machine malfunctions. Drains casting machine, tanks and pipelines when required and cleans equipment, using brushes, scrapers, air and water jets. May inspect material for thickness and clarity, using illuminated viewing panel. May direct wet-end operator to thread film sheet through immersion baths.

8179-170 DRY-END TENDER, CELLULOSE FILM(chem., n.e.c.) DPT:565
cellulose film dryer and winder.
GED: 2 SVP: 3 EC: 1 3 6 PA: M 4 5 7

Tends dry end of cellulose film casting machine that dries and winds continuous sheet of film into rolls:

Threads film from processing tanks through drying rollers onto core of take up reel. Presses switch and turns knobs to regulate winding speed and film tension according to specifications. Regulates heat of drying rollers and air circulation systems by turning valves. Rotates spider section of machine when take up reel is fully wound and cuts film sheet to transfer to new take up reel, using knife. Removes wound reel from mandrel, using hoist. Observes film and records visual imperfections. Requests film casting operator to vary speed of film formation to avoid breaks and wrinkles. Records dry end conditions on log sheets and identifying information on mill roll tickets. May adjust controls to maintain moisture content of film at specified level.

8179-174 WET-END TENDER, CELLULOSE FILM(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 4 6 7 PA: M 4 7

Tends wet-end baths of forming machine that treats continuous web of regenerated viscose to produce transparent cellulose film:

Threads film sheet through rollers of machine wet-end bath, using hook, cable and lead weights. Smooths moving sheet to remove wrinkles by adjusting support tubes and scrapers. Regulates chemical solution strength by metering supply of ingredients, such as caustic soda, bleach and lactic acid. Drains tanks when required and moves waste products to salvage area, using hand truck. May signal dry-end workers to remove faulty sections from film sheet.

8179-178 CELLULOSE-FILM REWINDER(chem., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Tends machine to wind cellulose film from reel to reel to remove wrinkles and slack, and examines film for defects:

Mounts roll of cellulose film on mandrel, using hoist. Wraps film end around empty core on take-up reel. Starts machine to wind film onto take-up reel and adjusts machine speed and tension of film by moving levers. Observes moving film sheet and passes hands over surface to detect holes and blisters. Cuts defective sections from film, using shears and splices cut ends, using heated splicing device. Removes rewound roll from mandrel, using hoist, weighs roll and places it in rack.

May record weight and length of film wound onto spool and number of spools wound.

Explosives Processing Occupations, n.e.c. 8179-198 through 8179-218

8179-198 WASH-HOUSE AND RECOVERY OPERATOR(explosives) DPT:682
GED: 3 SVP: 5 EC: 1 5 6 7 PA: L 4 7

Controls equipment to produce, separate and wash trinitrotoluene (T.N.T.) explosive and to recover spent acids from residue:

Determines strengths of toluene and acids by performing specific gravity tests and reviewing results of laboratory titrations. Turns dials or valves to regulate flows of water, acids and steam to processing chamber and heating coils. Admits metered quantity of chemicals to facilitate formation and purification of T.N.T. Adjusts valves and switches to maintain required temperatures in washers, separators and denitrator. Recovers acids and purifies water by regulating water flow into settling tanks to balance volume fed into nitrator. Draws acid samples, for testing, and pumps recovered acid to storage tanks. Pumps liquid T.N.T. to finishing house for further processing. Observes operation of washing and recovery units to detect malfunctions. Maintains daily log detailing production and recovery levels. May dismantle liquid delivery lines for cleaning, using wrenches.

8179-202 GRAINING-PRESS OPERATOR(explosives) DPT:682
GED: 3 SVP: 4 EC: 1 6 7 PA: M 4 7

Operates hydraulic press to extrude blocks of propellant powder into ropes, preparatory to cutting, drying, blending and bagging:

Attaches specified dies to compression cylinder, using wrenches, and tightens thumb screws to lock cover in place. Turns ram control valve to extrude powder slowly to avoid explosion. Examines extruded material for dirt, streaks and malformation. Changes mesh filter screens when extruded material shows indications of impurities escaping through screen. Positions empty fibre containers under discharge chute of each die hole and removes filled fibre containers.

May operate extrusion press in a specific area of smokeless powder production and be designated accordingly; for example, Finishing-Powder-Press Operator, Macaroni-Press Operator, Powder-Press Operator

8179-206 DRY-HOUSE MAN(explosives) DPT:585
GED: 2 SVP: 3 EC: 1 6 7 PA: L 4 7

Tends equipment that controls moisture content of stored explosive mixtures and ingredients according to prescribed standards:

Scoops chemicals from rubber containers into paper-or cloth-lined trays. Places trays on racks in steam-heated drying or humidity conditioning rooms for specified time to dehydrate or moisten chemicals. Observes recording instruments and turns valves to maintain temperature and humidity of rooms within prescribed limits. Records storage time to identify material of specified moisture content for further processing. Turns valves to drain explosive material from mixing-room waste collection tank into vat in which it is cooked to render it harmless for disposal. Shovels specified amount of caustic soda and aluminum chips into vat and closes loading hatch. Turns valves to admit steam into heating coils and sets automatic timer for prescribed cooking period. Drains vat of cooked material and flushes out sediment. Cleans utensils, floors, and walls, using water hose, to

remove accumulations of explosive material in accordance with safety regulations.

May fill acid reservoirs from tank cars by connecting hose lines and opening valves. May mix acid to desired strength for washing cartridge cases, by filling acid tank to level and adding water. May dip wire baskets of cartridge cases in acid solution for satin-finish.

8179-210 NITROCELLULOSE MAKER(explosives) DPT:585 nitrator tender.

GED: 2 SVP: 3 EC: I 6 7 PA: M 4 7

Tends battery of nitrators in which purified cotton linters are treated with acid to produce nitrocellulose, and centrifugal wringers to remove excess acid:

Turns valve to transfer specified amount of acid mixture from acid measuring pot to nitrators, and presses button to start nitrator agitators. Dumps pre-weighed charge of cotton linters into nitrators, using shovel or hoe, submerges linters at once to prevent fire and closes cover, using hoist and hand tools. Opens valves and starts pumps after nitration cycle is completed to transfer nitrocotton into centrifugal wringer. Sets timer to indicate end of wringing cycle, adjusts controls to regulate speed of wringer, and opens valves to remove excess acid. Stops wringer as indicated by timer. Opens water valve to flush wringer basin; loosens nitrocotton from walls, using scraper. Opens discharge gate and pushes nitrocotton through aperture into containers, using rake or hoe. Turns valves to flush and clean wringer with acid and water. Inspects equipment for flaws or defects and keeps records on wringing schedules and acid mix.

8179-214 BLACK-POWDER-PRESS TENDER(explosives) DPT:685

GED: 2 SVP: 2 EC: I 6 7 PA: M 3 4 7

Tends wheel-mill and hydraulic-ram press to process black powder ingredients prior to graphiting:

Dumps bag of powder ingredients into wheel-mill to work and mill them for pressing. Positions plates and spacers in powder press to prepare it for loading. Shovels powder from wheel-mill into press, until plates are filled. Starts motor and engages clutch on ram to compress powder in press. Stops motor and loosens press plates. Fills resultant voids in plates with additional powder, using shovel. Starts press and exerts pressure for second compression of powder. Stops press when required pressure is indicated on gauge.

8179-218 FUSE MAKER(explosives) DPT:685

GED: 2 SVP: 2 EC: I PA: M 4 7

Tends machine to make fuses for explosives and pyrotechnics:

Screens black powder to desired texture, using hand sifter. Scoops screened powder into machine feed hopper. Starts winding machine, by pressing button, to spin strands of cotton yarn around black powder core to form fuses, and wind fuses onto bobbins. Unloads bobbins from machine. Places bobbins in controlled-temperature room for specified time to dry and cure fuses. Unwinds cured fuses from bobbins and cuts fuses to required lengths, using knife.

Soap and Toiletries Processing Occupations, n.e.c.

8179-238 through 8179-264

8179-238 PHARMACEUTICAL OPERATOR(pharm. & toil.) DPT:682

GED: 3 SVP: 6 EC: I 5 7 PA: M 4 7

Controls equipment and tends machines to produce variety of pharmaceutical and toilet products or ingredients, performing any combination of the following duties:

Weighs and measures ingredients, using scales. Presses switches to start or stop various machines. Tends machine that coats medicinal tablets. Operates mixing machine and heated kettles to prepare specified ingredients for ointments, creams, pastes, liquid medications, powders, gums and similar drug products, adding ingredients according to formulas. Operates milling and grinding machines or uses mortar and pestle to reduce materials to designated sized particles. Prepares granulated products for compressing into tablets. Operates filter presses, sifting machines, autoclaves, water stills, and related equipment to prepare ingredients for further processing. Inspects, weighs, and tests hardness of tablets according to specifications.

Cleans and sterilizes pumps, filters, pipes, and mixing machines, using hot water and steam.

8179-242 STERILE-PRODUCTS PROCESSOR(pharm. & toil.) DPT:682

GED: 3 SVP: 5 EC: I 5 PA: M 4

Operates water still, mixer, clarifier, and filtering unit to process liquid and powder ingredients into sterile medications:

Turns valves to admit de-ionized water and steam to still and circulate water through condenser for distillation. Pours metered or measured amount of distilled water into container, weighs out or dumps pre-weighed ingredients into water and lowers mixing head into solution to dissolve and mix ingredients. Tests acidity of mixture, using pH meter. Adds acid or alkali as required to achieve prescribed acidity. Pours mixture into clarifier unit to remove insoluble material. Connects sterile filter to clarifier and turns valve to filter mixture under pressure.

8179-246 PLODDERMAN(soap) DPT:682

GED: 3 SVP: 4 EC: I 7 PA: M 4 7

Operates plodder machine to process raw soap noodles into slab form: Attaches forming plate to machine that shapes and sizes extruded soap log. Wheels empty soap loading buggies under discharge and scrap outlets of forming machine and delivers filled buggies to weigh station. Replaces filter and screens in machine, using hand tools. Starts machine by turning switches and opening valves to allow entry of soap noodles into compression screw, steam and ice water into heating and cooling coils, and application of vacuum to remove air from soap as it is drawn through machine. Observes flow of soap shavings through screens and compression screw and examines extruded soap slabs for specified colour, odour, size and consistency. Adjusts speed of compression screw rotation and steam and water flow to maintain production standards.

May weigh sample soap bars or filled buggies, using scales. May change soap cut-off blade and dismantle, clean and reassemble machine components, using hand tools. May feed soap slabs into machine that cuts them into bars, and be designated accordingly, Slabber

8179-250 GRANULATOR-MACHINE OPERATOR(pharm. & toil.) DPT:682

GED: 3 SVP: 3 EC: I PA: M 4

Operates mixing and milling machines to granulate powdered ingredients preparatory to compressing into medicinal tablets:

Weighs and measures ingredients according to formula and size of batch to be mixed. Presses switch to start mixing machine to blend ingredients, and adds starch paste, gelatine, or water and alcohol to mixture to bind ingredients. Breaks up lumps in mixture, using spatula. Spreads mixture onto trays, and places trays in oven or steam drier at preset temperature. Removes trays and feels material to determine whether batch requires additional mixing or drying. Sets up and operates oscillating or comminuting mill to force mixture through sieves and produce product of specified fineness. Tends blenders, tumbling barrel or other equipment to mix binders, flavouring oils, and lubricating agents for use in compounding tablets.

8179-254 TOILETRIES MOULDER AND COMPRESSOR(pharm. & toil.) DPT:685

GED: 2 SVP: 2 EC: I 6 PA: L 4 7

Tends equipment to mould or compress prepared ingredients to form products; such as, lipsticks, deodorizer cakes or powder compact refills by either of the following methods:

1. Fills heated kettle with cosmetic ingredients and adjusts control to heat contents to desired pouring temperature. Places mould or rack loaded with lipstick cases under pouring spout of kettle. Opens valve to release metered quantity of molten material into mould cavities or lipstick cases. Sets mould or cases aside to cool and congeal lipsticks. Opens mould to release lipsticks. 2. Examines bulk cosmetic powder in tray and removes lumps, using spatula. Loads metal or plastic powder cake bases into indentations in mould board. Spreads glue onto bases and scoops powder or crystals into them. Tamps and levels powder in moulds, using scraper, to ensure even surface and texture of product. Loads mould board onto press bed. Presses powder into cakes or sticks by depressing buttons. Removes mould board and dumps compressed products onto drying tray. Examines products and discards those

showing obvious imperfections, such as cracks, bubbles or discoloured areas.

May glaze lipsticks by passing them through gas-flame. May assemble lipsticks into retractable containers. May insert products into compacts or shipping cartons. May set up press by selecting and fitting specified dies.

8179-260 SCREENER-PERFUMER(soap) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: H 4 7

Tends equipment that screens detergent or soap powder and impregnates it with perfume:

Adjusts screw and belt conveyors to regulate flow of powder onto screens over hopper. Regulates flow of perfume to hopper. Turns valve to pump perfume through jets onto powder as it enters hopper. Observes spraying action and level of powder flowing into hopper and hoes powder frequently to ensure uniform perfuming. Shovels powder into barrels and transports them to crutching machine for reprocessing.

May measure specific gravity of powder, using gram balance and standard containers and notifies foreman of deviations from specifications.

8179-264 SOAP CUTTER AND STAMPER(soap) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: H 4 7

Tends equipment that cuts and stamps soap bars:

Moves controls to regulate machine speed and maintain uniform flow of soap through extruding, cutting and stamping machine. Examines embossed bars for defects, such as mottled colouring, unsymmetrical shape and poor reproduction of embossed design or trade mark. Stops machine when unsatisfactory bars are detected.

May move soap trucks to and from drying room. May maintain equipment by cleaning and lubricating machinery, replacing worn cutting heads and filling feed tanks.

Miscellaneous Chemical Processing Occupations, n.e.c. 8179-284 through 8179-399

8179-284 DRY-ICE MAKER(chem., n.e.c.) DPT:682
GED: 3 SVP: 6 EC: I 5 6 PA: M 4 7

Operates equipment; such as, hydraulic press, saws, conveyors, and compressor to make dry-ice blocks from liquid carbon dioxide:

Monitors meters, gauges, and recording instruments to ensure specified temperature, pressures and flow of liquified carbon dioxide from tank car and gas recovery system. Observes operation of equipment to detect malfunctions and records operational data in logbook. Turns valves to transfer liquid carbon dioxide into expansion chamber where snow is formed by release in pressure. Operates hydraulic ram that compresses snow into blocks of dry ice. Pushes blocks onto conveyor that carries them under saws that cut blocks to specified size and transfers them onto scale. Records block weight on ticket. Places blocks in insulated bags, using tongs, seals bag and attaches weight ticket. Loads blocks into insulated bins for storage or shipment.

8179-286 FLAT-BED PRESS OPERATOR(linoleum prod.) DPT:662
floor-covering-machine operator.
GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Operates flat-bed presses that consolidate carrier and colour mix into moulded hard-surface floor covering:

Starts mechanism that moves carrier (felt backing) over table and initiate colour-depositing cycles. Turns knob or opens air valve to move goods from table into flat-bed presses. Reads temperature on recording instruments to ascertain specified temperature and makes adjustments as necessary. Observes operations from control panel to detect equipment malfunctions, and stops table movement to allow for necessary adjustments. Determines from specification data, length of goods required for storing and affixes register slip on material to guide storing workers. Gives instructions to material handlers to remove material from machine.

May take signals from table crew in cases of malfunctions. May operate machine that automatically cuts specified lengths of goods for storage.

8179-288 LATEX-COAGULATION OPERATOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 3 4 7 PA: L 4 7

Controls equipment used to coagulate synthetic latex into rubber-crumb slurry and to prepare rubber crumbs for further processing:

Starts feed pumps and turns valves to supply proportioned quantities of latex and chemical solutions to creaming and coagulating tanks. Turns switches and valves to direct flow of creamed latex to coagulating tank and flow of coagulated slurry to soap conversion tank, to convert soap to fatty acid and extract fatty acid from slurry. Regulates speed of tank stirring mechanisms, temperature and acid-concentration levels. Observes appearance of rubber crumbs through sight-glass apertures. Monitors operation of filters, shaker screens, hammer mills and dewatering extruders to dry and pelletize rubber crumbs. Records on log sheets data, such as temperature and acid concentration. Cleans shaker screens, using water spray. Tests acid or brine samples, using burette, hydrometer and pH meter.

8179-292 OXIDIZER, LINOLEUM OILS(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I PA: M 4 7

Controls one or more units of oxidizing equipment to process oils and prepare them for use in production of hard-surface floor covering:

Turns valves to admit prescribed amounts of ingredients into equipment according to formula. Adjusts valves to regulate air supply, as specified, to obtain oxidation. Sets thermostat to maintain prescribed temperature during oxidizing cycle. Observes colour of batch through sightglass to determine completion of oxidation, according to process specifications. Opens bottom door to discharge mixture from oxidizer or starts pumps to remove material for further processing. May test viscosity of mixture, using viscometer.

8179-296 PHOSPHORIC ACID EXTRACTOR(chem., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 7 PA: L 4 7

Operates rock-grinding mills and acid reactors to produce phosphoric acid from phosphate rock:

Operates ball mill to crush phosphate rock to desired particle size. Feeds specified quantities of crushed rock and sulphuric acid of known strength to attack tank, by moving controls on panelboard. Adds chemical reagents to tank at established process points and maintains specified levels of vacuum, temperature, and feed rates of acids, water and chemicals, by observing gauges and moving valves and switches. Draws solution samples and performs centrifugal and specific gravity tests to determine proportion of sulphur trioxide and adjusts process reaction accordingly. Examines process equipment, such as pumps and valves to detect leaks and malfunctions. Maintains production log and reports defects.

May tend filters to separate phosphoric acid from gypsum or regulate flow of material to filter operator, to co-ordinate output and maintenance requirements.

8179-300 BLEACHER, OILS(chem., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I 7 PA: H 4 7

Operates equipment to bleach and filter crude vegetable and animal oils:

Dumps desired quantity, of oil decolourizing medium, such as diatomaceous or fullers earth into feed hopper. Regulates oil feed and steam valves to obtain required viscosity and starts agitator to mix decolourizing agent and oil for prescribed time. Obtains samples of mixture for analysis, using colorimeter. Adds further quantities of decolourizing substances as required to produce dry oil. Transfers oil through filter presses to remove diatomaceous earth. Pumps bleached oil to cooling system that reduces oil temperatures to required level and crystallizes fatty acid derivatives. Pumps chilled oil through filters to storage tanks. Cleans filter presses and removes filter cakes.

May deodorize bleached oil by circulating live steam through it in deodorizer still.

- 8179-304 OPERATOR, TITAL LIQUOR PLANT**(chem., n.e.c.; paint & varn.) DPT:682
titanium dioxide processor.
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Controls equipment used to produce crude liquor and nuclei used in production of titanium dioxide pigments: Turns valves on central control panel to fill nuclei preparation tank with measured quantity of water and caustic alkali. Actuates mechanical feeders to admit metered amounts of pulp and chemicals in correct sequence. Heats batch to specified temperature by admitting steam into tank. Monitors instruments to control process. Transfers finished solution to settling vat and pumps settled nuclei material to storage tank. Opens valves to fill digester with desired volume of titanium oxide and sulphuric acid and dumps measured quantity of catalyst. Starts reaction in digester by opening steam valve and controls reaction from instrument panel. Pumps resultant crude tital (titanium tetrachloride) liquor through filters into storage vessel. Obtains solution samples and performs tests, such as specific gravity and pH level or sends samples to laboratory. Cleans tanks and filters, using hose and coats filter elements with absorbent compound. Records operating data in log.

- 8179-308 FURNACE COOLER**(non-metal. min. prod., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: I 3 6 7 PA: H 4 7

Cools charges of artificial graphite electrodes or abrasives in electrothermal furnace by removing insulation or spraying with water, to prevent damage to electrodes or control crystal growth: Pokes holes in furnace insulation, using pick or rake and lowers side gates of furnace to hasten cooling of charge. Observes colour of charge to determine process temperature and tamps holes to prevent air infiltration and consequent oxidation of electrodes if charge is cooling too fast. Rakes or shovels insulating material from furnace and quenches with water spray to speed cooling, or retains insulation to prolong cooling. May install or disassemble furnace water spray system. May sort firebricks from insulating material to recuperate firebricks, and shovel insulating material into containers.

- 8179-312 FERTILIZER MAKER, PHOSPHATE PROCESS**(chem., n.e.c.) DPT:685
GED: 3 SVP: 3 EC: I 5 6 7 PA: M 2 3 4 7

Tends pulverizing mill, screens and drum digester to process phosphate rock into fertilizer: Tends pulverizing mill to produce crushed rock of required fineness for efficient use. Starts and stops conveyor feed in response to instrument readings that indicate abnormal stress on pulverizing mill. Pulls lever to supply pulverized phosphate through weigh-feeder to drum digester. Opens sulphuric-acid valve to designated setting and starts feed pump. Moves switch to rotate drum to tumble and cook mixture for specified period to disintegrate phosphate rock and produce fertilizer slurry. Starts vacuum pumps at indicated time and tumbles slurry under vacuum to produce dry fertilizer. Releases vacuum and opens discharge vent to drop fertilizer onto conveyor for transfer to storage.

- 8179-316 NUCLEAR-FUEL PROCESSOR**(chem., n.e.c.; non-ferrous metal) DPT:685
GED: 3 SVP: 3 EC: I 3 4 5 6 PA: H 4 7

Tends equipment to process refined uranium oxide powder into pellets, by performing any combination of the following duties: Weighs out specified quantities of fine thorium and uranium oxide powders, adds cohesive agent and dumps materials into hopper of mixing machine. Scoops mixed powder into feed hopper and starts machine that compresses fine powder into slugs and crushes slugs to produce coarse granulated material. Places sample of granulated powder in testing device and turns handle to verify consistency of granules. Shovels granulated powder into feed bin and starts press to compress powder into pellets. Observes discharge tray and removes malformed pellets. Measures and weighs sample pellets, using micrometer and scales, to ensure maintenance of quality standards. Places pellets in furnace trays and spreads insulation material over pellets. Loads trays into hydrogen sintering furnace and sets timers and switches controlling temperature and feed rates. Empties trays of sintered pellets into feed chute of centreless grinder. Adjusts controls

to specified feed and speed rates, starts grinder and pulls lever to drop pellets between grinding wheels to grind them to desired dimensions. Inspects ground pellets to detect chips, cracks and flawed areas and measures dimensions, using gauges. Washes pellets in trays to remove dust and chips and loads trays into drying oven. Stacks trays containing dried pellets. Maintains production log. May insert pellets into fuel rods and measure radiation of fuel rods, using scanning unit.

- 8179-318 PIGMENT PRESSER**(chem., n.e.c.) DPT:685
GED: 2 SVP: 4 EC: I 3 7 PA: H 4

Tends equipment that mixes, purifies, and dries colour slurry used in the manufacture of organic and inorganic paint pigments to prepare slurry for pigment grinders: Opens valve to admit liquid ingredients into mixing vat. Starts pump to transfer slurry from vat to filter-plate press. Opens pressure valves to force water and air through series of fabric covered panels to remove impurities, such as soluble salts, and moisture from mixture. Turns gear wheel to release tension of plates after completion of filtration and pressing cycle. Cuts mixture from press frames with spatula and drops mixture into container. Moves loaded container from press to holding area, using hand truck. Shovels pigment cake into trays. Places filled trays on dryer cart and pushes cart into oven for drying. Adjusts dryer temperature controls to dry pigment according to specifications. Fills steel barrels with dried pigment, using shovel.

- 8179-320 ACETYLENE-CYLINDER PREPARER**(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: M 4

Mixes, packs, solidifies, and dries absorbent for compressed acetylene gas, performing any combination of the following duties: Weighs or measures water and powdered ingredients, such as asbestos, diatomaceous earth, charcoal and lime and dumps them into mixer. Starts agitator to mix ingredients for specified time. Connects cylinders to vacuum line and turns valves to transfer mixture into cylinders. Rolls cylinders into special kiln and sets temperature and pressure controls to solidify and dry mixture in cylinder. Installs valves and safety plugs. Weighs cylinders to ascertain amount of mixture packed. Connects acetone feed line, using hand tools, and turns valve to fill cylinder with acetone, according to specifications. Paints cylinder, using spray gun. Stencils serial numbers and tare weight on cylinders.

- 8179-322 DIPPING-MACHINE TENDER**(rubber) DPT:665
GED: 2 SVP: 3 EC: I 4 PA: M 4 5 6

Tends machine that dips forms into coagulant or liquid latex to mould rubber articles, such as gloves, soothers, nipples and balloons, by any of the following methods:

1. Mixes latex and other materials in drums, using electric mixer or wooden paddle. Transfers solution from drum into cans and conveys can with hand truck to holding tanks. Pours solution into machine tanks until specified level is reached and starts machine. Moves forms mounted on suspended conveyor, through vats, driers and ovens, in continuous operations, to form product by dipping, leaching and curing. Removes sample of product, weighs it and adds solution in tanks, as required. Changes filters in tanks. Replaces loose or broken forms on conveyor. Verifies temperature and humidity on instrument control panel. Cleans forms, conveyor and tanks, using pressure hose and scraper. Direct activities of machine feeders. Lifts form board from conveyor and fastens it to machine bed, using hinge clamps and slide bolts. 2. Inverts bed, manually, and moves lever to immerse forms in tank of solution. Raises and rocks bed to create movement that dries coagulant or equally distributes and sets latex on forms. Lifts boards to conveyor for further processing.

- 8179-324 PELLETIZER, PLASTICS**(chem., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends machine to compress powdered plastics material into pellet or biscuit form: Selects desired forming die. Cleans die, using brush and cloths, and installs die in press. Dumps powdered material into feed hopper. Turns valves to regulate feed rate, temperature and pressure of press to specified levels and to ensure maintenance of required density of

compressed product. Starts machine by pressing button and observes flow of compressed pellets from discharge chute. May weigh sample pellet to ensure adherence to specifications and adjust machine controls as required.

8179-328 REFINER-MILL TENDER(rubber) DPT:685
rough-and-finish refinerman.
 GED: 2 SVP: 3 EC: 1 5 PA: M 4

Tends rough-and-finish refiner mills that break lumpy, burned or reclaimed rubber to refine it into slabs: Adjusts distance between mill rolls and positions knife blades across front roll on refiners, using wrench. Feeds rubber into rolls of rough refiner, carries emerging sheet to finish refiner and feeds sheet into finish mill. Starts rotation of roll drum in front of finish mill, and starts sheet winding around drum as it drops from mill. Controls thermal expansion and contraction of mill rolls by turning water valves. Stops rotation of drum when several thicknesses accumulate. Cuts rubber across length of drum, using knife. Carries rubber slab to truck and dusts slab with soapstone to prevent tackiness.

8179-332 SPLASH-LINE TENDER(linoleum prod.) DPT:685
 GED: 2 SVP: 3 EC: 1 5 PA: H 4 7

Tends marbleizing equipment that mixes, rolls, cuts and grinds raw materials into chips used to produce desired appearance in floor tiles: Weighs specified quantities of materials, such as limestone, resins and asbestos fibres and dumps them into mixer hopper. Presses buttons to start mixer and adjusts temperature controls to attain required consistency of material for proper mixing. Dumps mixed material onto conveyor belt that conveys it into calenders for rolling to prescribed thickness. Presses pedal, to activate knife that automatically cuts material into slabs. Loads slabs on conveyor that moves them through drying oven for hardening and dumps hardened slabs into grinder to form chips.

8179-336 EQUIPMENT CLEANER(paint & varn.) DPT:684
 GED: 2 SVP: 2 EC: 1 5 6 7 PA: H 2 3 4 7

Cleans tanks, vats, kettles and chutes used in production of paint products: Disconnects production supply lines and locks safety devices on agitator switch or removes agitator. Connects compressed-air hoses to purge toxic fumes. Obtains approval certificate from designated official when vessel is declared safe to enter. Enters tank and examines condition of interior to determine proper cleaning method. Pre-soaks interior with appropriate acid or alkaline solution to soften or loosen caked material. Pumps cleaning solution into storage tank after required interval, using portable electric pump. Hoses interior of vessel with water to remove surface acid or alkaline solution before re-entering. Connects air-compressor hoses to portable pneumatic chisel and ventilating equipment. Chips and scrapes caked material from walls, ceiling, agitator and bottom surfaces and loads into container for removal from vessel. Dumps scrapings into disposal drum, and removes it to refuse area. Hoses and scrubs tank interior, using water, solvents and scrubbing equipment. May haul kettles and chutes to burning area and burn off flammable residue.

8179-340 SLAB-OFF MAN(rubber) DPT:685
sheeter.
 GED: 2 SVP: 2 EC: 1 5 6 PA: M 4

Tends slab-off machine and mill that process compounded rubber from banbury mixer into slabs or sheets: Adjusts knife on mill, using hand tools, or uses hand knife, to cut rubber to specified width for feed-off strip. Cuts feed-off strip with knife, rolls it into bundle and feeds it back into mill until specified consistency is obtained, or feeds strip onto conveyor of machine that dips strip in solution to reduce stickiness. Cuts strip into slabs and hangs slabs on cooling conveyor for further processing. Turns valve to fill tank of machine with slab-dip solution. May feed rubber strip into extruding machine, before slab-off, to obtain desired consistency. May cut rubber draped on hanger bars into slabs, using knife.

8179-344 BACKING-IN-MACHINE TENDER(linoleum prod.) DPT:685

GED: 2 SVP: 2 ED: 1 PA: H 4 7

Tends machine that feeds moulded floor covering into stove for heat treating: Positions rolls of floor covering, such as felt-based or backed linoleum on spindle of machine, using power hoist. Threads floor covering through rollers, and attaches cable that pulls floor covering into heated stove to dry and harden on horizontal racks or in festoons. Presses foot pedal to control feed of material. Removes empty spindle from stand, replaces it with full roll, using hoist, attaches and seals material to end of previous roll, using press machine. May examine floor covering to detect and repair defects and cuts out damaged area, using knife.

8179-348 COMPOUND WORKER(plastic prod.) DPT:685
 GED: 2 SVP: 2 EC: 1 7 PA: M 4

Grinds, mixes and blends, new and recovered materials, for use in production of phonograph records, by performing any combination of the following duties: Transports raw material from storage area with hand cart. Weighs specified quantities of ingredients such as lamp black and polyvinyl chloride and dumps them into blending machine hopper. Moves empty tote box to position near blender, using hand cart. Presses button to start blender. Starts suction pump or blower attachment to move blended material into tote box. Removes labelled section from defective records, using hydraulic punch press. Transports bins filled with scrap records to grinding machine. Starts grinder and loads scrap into hopper. Loads ground scrap into tote boxes, using vacuum pump. Moves tote boxes to record press, using hand cart and connects them to record blank press machines with rubber hose, using hand tools. Records weight of scrap and new material processed. May use fork lift truck to move materials.

8179-352 IMPRINTING-MACHINE TENDER, PLASTICS(plastic prod.) DPT:685
 GED: 2 SVP: 2 EC: 1 6 PA: M 4 7

Tends machine, or unit of automatic machine, that imprints designs on plastic sheets or sheeting: Turns valves to regulate heat of machine. Threads sheeting between machine and embossed rollers and adjusts tension of machine rollers, or positions sheets under embossed plate. Starts machine and inspects finished work to ensure proper imprinting of sheets and sheeting. May truck materials to and from work area. May remove rolls of material from windup rack, using hoist.

8179-356 PARADICHLOROBENZENE MAN(chem., n.e.c.) DPT:685
 GED: 2 SVP: 2 EC: 1 7 PA: M 4 7

Tends equipment that cools, solidifies and crushes paradichlorobenzene preparatory to shipment, storage, or processing into moth repellent or deodorizer cakes: Pumps liquid paradichlorobenzene into water-jacketed moulds, by pressing switch. Turns valve to circulate chilled water through mould jacket to solidify liquid material. Opens steam valve to heat jacket to loosen solidified product and facilitate removal. Dumps solidified material into crusher and starts crusher to granulate product. Fills shipping containers with granulated material, using rake. May fit suitable screen to sifting machine, load sifter with granulated product and tend sifter to segregate granulated material of various sizes.

8179-360 SPOOLER, LATEX THREADS(rubber) DPT:685
 GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends equipment that winds latex thread onto spools: Attaches latex threads from curing drum to spools. Starts equipment that revolves curing drum to unwind thread. Starts takeup reel and containing spools by pressing button. Observes operation and adjusts speed of takeup reel to regulate tension. Straightens bent thread guides and joins broken threads, by pressing ends together. Removes filled spools or rolls, and places them on rack. Weighs filled rack to determine yardage and records weight on production report. Pushes rack into drying cabinet.

8179-364 VARNISH-MAKER HELPER(paint & varn.)

DPT:686

GED: 2 SVP: 2 EC: I 5 6 PA: H 3 4

Helps in processing ingredients used in making varnishes: Transfers ingredients, such as gums, resin, turpentine and oils from storage to work area by hand truck. Weighs specific amounts of dry materials and shovels or dumps them into kettles or supply tanks. Mixes ingredients in kettles, using paddle. Cleans kettles and other equipment, using high pressure hose, solvents and brushes. See also definition for term title 02-160 HELPER (any ind.). May operate manual or power operated hoist.

8179-368 FORMULA WEIGHER(plastic prod.; rubber)

DPT:687

GED: 2 SVP: 2 EC: I 7 PA: M 3 4 7

Measures out and weighs crude rubber, chemical compounds and oils according to formulae and transfers materials to mixing machine: Selects and dumps materials; such as, crude rubber, plastic compounds, chemicals and oils into designated storage containers. Pushes hand truck or moves levers to start and stop powered conveyor and move weighing bin to storage containers. Pulls lever to discharge materials from storage containers into weighing bin and observes scale until specified weights for ingredients are reached. Scoops small quantities of chemicals from storage boxes to weighing tray and

empties chemicals into storage containers or mixer chute. Positions weighing bin with specified ingredients over chute of mixing machine. May record weight and materials used and tag containers to identify ingredients. May tend pulverizing and mixing machines to reclaim plastic and rubber stock. May weigh out batches of plastic or rubber and be designated accordingly; for example, Plastic Compounder(plastic prod.) Rubber Compounder(rubber)

8179-399 OTHER CHEMICALS, PETROLEUM, RUBBER, PLASTIC AND RELATED MATERIALS PROCESSING OCCUPATIONS

This group includes chemicals, petroleum, rubber, plastic and related materials processing workers, not elsewhere classified; for example, those who cast liquid plastics material into sheet form in cellular glass moulds; cast resinous material used in the manufacture of linoleum and tiles; operate equipment to produce caustic alkalis, track signals and match heads for explosive detonators; and determine the disposition of salvaged, defective or obsolete paint products. Typical examples of occupational titles covered by this residual group definition are:

Interline Operator(explosives)
Match-Head Maker(explosives)
Mould Filler and Stripper(plastic prod.)
Salvage Man(paint & varn.)
Utility Operator(chem., n.e.c.)

821/822-FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS

This minor group includes occupations concerned with preparing food and related products for human or animal consumption. Includes all processing phases after harvesting and prior to marketing; recovering by-product materials; flour and grain milling and baking; slaughtering and meat cutting; meat and fish canning, curing and packing; fruit and vegetable preserving; milk, sugar, and beverage processing; preparation of pre-cooked foods, meals or ingredients; and marking and packaging when it is part of the production process. These occupations are classified in the following unit groups:

- 8210** Foremen: Food, Beverage and Related Processing Occupations
- 8211** Flour and Grain Milling Occupations
- 8213** Baking, Confectionery Making and Related Occupations
- 8215** Slaughtering and Meat Cutting, Canning, Curing and Packing Occupations
- 8217** Fish Canning, Curing and Packing Occupations
- 8221** Fruit and Vegetable Canning, Preserving and Packing Occupations
- 8223** Milk Processing and Related Occupations
- 8225** Sugar Processing and Related Occupations
- 8226** Inspecting, Testing, Grading and Sampling Occupations: Food, Beverage and Related Processing
- 8227** Beverage Processing Occupations
- 8228** Occupations in Labouring and Other Elemental Work: Food, Beverage and Related Processing
- 8229** Food, Beverage and Related Processing Occupations, n.e.c.

8210-FOREMEN: FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in preparing food and related products for commercial and domestic use.

8210-110 FOREMAN, BAKING, CONFECTIONERY-MAKING AND RELATED OCCUPATIONS (bake. prod.; confection.; food & bev., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in making bakery products, such as breads, cakes, pastries; dried-food pastes, such as macaroni and noodles; cooked cereals; and confectionery products, such as chocolate and cocoa confections, candies, chewing gum, popcorn, roasted and salted nuts, (Unit Group 8213):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Bakery(bake. prod.)

Foreman, Candy Making(confection.)

Foreman, Chocolate Candies(confection.)

Foreman, Nut Processing(confection.)

8210-114 FOREMAN, BEVERAGE-PROCESSING

OCCUPATIONS(distill., brew. & ferment.; food & bev., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in processing beverage products, such as coffee, tea, soft drinks, fruit juices, beer, wine and liquor, (Unit Group 8227):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Cellarmaster, Winery(distill., brew. & ferment.)

Foreman, Coffee Roasting(food & bev., n.e.c.)

Foreman, Distilling(distill., brew. & ferment.)

Foreman, Tea Blending(food & bev., n.e.c.)

8210-118 FOREMAN, FISH-CANNING, CURING-AND-PACKING OCCUPATIONS (fish process.) DPT:138

Supervises and co-ordinates activities of workers engaged in preparing, preserving and packing fish and shellfish for use as food and by-products, (Unit Group 8217):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Fish Freezing and Storage

Foreman, Fish Preparation
Foreman, Fish Reduction

**8210-122 FOREMAN, FLOUR-AND-GRAIN-MILLING
OCCUPATIONS** (animal & veg. oil; feed & flour
mill.; food & bev., n.e.c.) **DPT:138**

Supervises and co-ordinates activities of workers concerned with cleaning, separating, crushing, grinding, blending, filtering, neutralizing, steeping and otherwise processing grains, corn and oil seeds to make flour, starches, vegetable oils, and related products including animal feeds, (Unit Group 8211):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Dry Starch(food & bev., n.e.c.)
Foreman, Feed Blending(feed & flour mill.)
Foreman, Feed Milling(feed & flour mill.)
Foreman, Flour Milling(feed & flour mill.)
Foreman, Grain Elevator(food & flour mill.)
Foreman, Vegetable-Oil Milling(animal & veg. oil)
Foreman, Wet Starch(food & bev., n.e.c.)

**8210-126 FOREMAN, FRUIT-AND-VEGETABLE-CANNING,
PRESERVING-AND-PACKING OCCUPATIONS**
(can. & preserv., n.e.c.) **DPT:138**

Supervises and co-ordinates activities of workers engaged in preparing and preserving fruit and vegetables by canning, dehydrating, freezing, pickling or using other preservatives, (Unit Group 8221):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Chief Cook, Jam
Foreman, Jelly Processing
Foreman, Pickles and Relish Processing
Foreman, Vegetable Soups

**8210-130 FOREMAN, INSPECTING, TESTING, GRADING-
AND-SAMPLING OCCUPATIONS: FOOD,
BEVERAGE AND RELATED PROCESSING**(distill.,
brew. & ferment.; food & bev., n.e.c.; whole. trade)
DPT:138

Supervises and co-ordinates activities of workers engaged in developing, inspecting, testing, grading and sampling foods and beverages, (Unit Group 8226):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Food Testing(food & bev., n.e.c.)
Foreman, Fruit Grading(whole. trade)
Foreman, Testing and Analysis(food & bev., n.e.c.)
Supervisor, Control Laboratory(distill., brew. & ferment.)

**8210-134 FOREMAN, LABOURERS AND ELEMENTAL
WORKERS: FOOD, BEVERAGE AND RELATED
PROCESSING**(distill., brew. & ferment.; food &
bev., n.e.c.) **DPT:138**

Supervises and co-ordinates activities of workers engaged in labouring or other elemental work concerned with preparing food and related products for commercial or domestic use, (Unit Group 8228):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Wash House(distill., brew. & ferment.)
Foreman, Yard(distill., brew. & ferment.)

**8210-138 FOREMAN, MILK-PROCESSING
OCCUPATIONS**(dairy) **DPT:138**

Supervises and co-ordinates activities of workers engaged in processing raw milk and cream to make pasteurized milk and cream, and butter, cheese, ice cream, frozen novelties and other dairy products, (Unit Group 8223):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Dairy Products
Foreman, Ice Cream
Foreman, Milk Production

**8210-142 FOREMAN, SLAUGHTERING-AND-MEAT-
PACKING OCCUPATIONS** (slaught. & meat pack.)
DPT:138

foreman, abattoir.

Supervises and co-ordinates activities of workers engaged in slaughtering animals and poultry; preparing, preserving and packing meats; and processing edible and inedible by-products for food or other uses, (Unit Group 8215):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Beef Boning and Cutting
Foreman, Beef Dressing
Foreman, Cook Room
Foreman, Ham Curing
Foreman, Hide Curing
Foreman, Pork Cutting
Foreman, Poultry Eviscerating
Foreman, Rendering

**8210-146 FOREMAN, SUGAR-PROCESSING AND
RELATED OCCUPATIONS** (sugar) **DPT:138**

Supervises and co-ordinates activities of workers engaged in extracting, refining and processing sugar, molasses and sugar by-products from materials such as raw cane sugar, sugar beets and corn, (Unit Group 8225):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Char-House Foreman
Filter-House Foreman
Pan-House Foreman
Pulp-Drier Foreman
Raw-Sugar Foreman

**8210-199 OTHER FOREMEN, FOOD-AND-BEVERAGE-
PROCESSING OCCUPATIONS**

This group includes food and beverage processing foremen, not elsewhere classified; for example, those who supervise and co-ordinate the activities of workers engaged in refining chocolate and processing potato chips.
Typical examples of occupational titles covered by this residual group definition are:
Foreman, Chocolate Refining(food & bev., n.e.c.)
Foreman, Potato-Chip Processing(food & bev., n.e.c.)

8211-FLOUR AND GRAIN MILLING OCCUPATIONS

This unit group includes occupations concerned with cleaning, separating, crushing, grinding, blending, filtering, neutralizing, steeping and otherwise processing grains, corn and oil seed to make flour, starches, vegetable oils, and related products including animal feeds. Occupations concerned with converting corn starch into glucose and processing corn sugar and corn syrup are classified in Unit Group 8225, SUGAR PROCESSING AND RELATED OCCUPATIONS.

Flour and Grain Processing Occupations
8211-110 through 8211-194

8211-110 RICE MILLER(feed & flour mill.) DPT:460
GED: 3 SVP: 8 EC: 1 5 PA: M 2 3 4 7

Sets up and monitors operation of rice-milling machines that clean, separate, hull and polish rice:

Determines amounts and grades of rice to be milled and prepares machine-production schedules. Selects and installs screens and augers in separators and hullers that abrade bran from grains to conform with specified grade, using hand tools. Examines and feels rice grains in feed hoppers and outlets of machines to assess progress of cleaning and polishing, and ratio of broken to whole grains. Turns wheels to adjust hullers and reduce amount of broken rice. Adjusts flow of desiccant powder from metering dispenser to reduce stickiness of bran and adjusts aspirators that remove dry bran from screens. Turns valve to adjust flow of polishing solution to tumbling screens used to polish rice. Changes grading screens in grinders that reduce broken grains into brewers' rice, using hand tools. Records production data. Directs activities of other workers engaged in storing and conveying rice and tending rice-milling machines. Cleans, lubricates and maintains milling equipment, bucket elevators and conveyors.

8211-114 MILLER(feed & flour mill.) DPT:562
GED: 3 SVP: 6 EC: 1 5 6 7 PA: L 2 4 7

Operates cracking rolls, hammer mills, high-speed grinder or buhr mill to grind flour, meal, grits or hominy, according to specifications: Opens and closes slides in spouts to route grain to required grinders. Turns wheels, or actuates panel controls to adjust pressure of rollers for each passage of grain, or adjusts pressure of grinding stones according to grain size, hardness and fineness specified for product. Adjusts feed chutes to regulate flow of grain to equipment. Reads dials and presses panel buttons to control humidity. Obtains and sends samples of ground grain to laboratory for analysis. Records production data. Replaces worn grinding rollers or stones, using chain hoist and hand tools, and lubricates machines. Directs workers engaged in cleaning grain, sifting or bolting meal or flour, or routing grain or products by conveyor to screening equipment and to storage bins. May be designated according to type of equipment operated, or according to kind of grain or cereal milled; for example, Buhr-Mill Operator, Dry-Corn Miller, Flour Miller

8211-118 MILLER, CUSTOM-FEED(feed & flour mill.) DPT:562
custom-feed preparer.
GED: 3 SVP: 6 EC: 1 6 7 PA: M 2 4

Operates grinding and mixing machines and related equipment to process and bag custom lots of animal and poultry feed, according to specifications:

Moves hand controls to adjust and start roll grinders to grind grain and other feed materials as specified. Weighs, and transfers ground feed on conveyor to mixing machine. Adds specified amounts of supplements, such as malt, salt, vitamins, antibiotics, proteins and minerals, using scoop or spray system. Actuates mixing-machine controls to mix feeds for required time. Inspects processed feeds for consistency and texture. Starts conveyors to transport mixed feeds to bagging and sealing machines. Shovels up excess feed or spillages and frees blockages in conveyors. Records production data. Directs workers engaged in mixing, bagging, shipping and storing feed. May compute charges and collect payments. May purchase supplies and keep financial records.

8211-122 FLAKE MILLER(feed & flour mill.; food & bev., n.e.c.) DPT:582
GED: 3 SVP: 6 EC: 1 6 7 PA: L 2 4 7

Operates drier, huller, separator, cutter, cooker, flake roller and auxiliary equipment to process grain into products such as rolled-oat flakes:

Adjusts slides in chutes and turns valves to regulate flow of grain to machines. Adjusts flow of drying and cleaning air, and routes grain to mechanical cleaner. Feels cleaned material to determine amount of hulling required. Observes hulling process and adjusts speed of

machines used to remove hulls from grain. Routes grain to drying units and to meal-cutting machine. Turns valves to regulate temperature and moisture in cooker, and adjusts tension on flaking-machine rolls according to condition and thickness of rolled flakes. Transfers flakes to humidifying bins for tempering when specified, and transfers tempered flakes through cooker and flaking rolls to produce instant cereals. Makes minor adjustments to system, and verifies loads on conveyors and rollers, using ammeter. Removes and weighs samples from cracking and flaking mills, using scoop and scales. Measures thickness of flake, using micrometer, and compares test results with specifications. Records test results, production data and ammeter readings in log book.

May tend machines to crack, flake and clean soya beans prior to extraction of oil. May be designated according to product milled; for example,

Miller, Oats(food & bev., n.e.c.)
Soya-Mill Operator(feed & flour mill.)

8211-126 GRAIN MILLER(distill., brew. & ferment.; feed & flour mill.) DPT:562
GED: 3 SVP: 4 EC: 1 6 7 PA: L 4 6 7

Controls machines and equipment to clean and grind whole grain for further processing:

Actuates panel controls to start automatic cleaning machine that blows and sifts foreign particles such as dirt, stones and twigs from whole grain, and conveys clean grain to storage tank. Starts pump to transfer clean grain from storage tank into scale-hopper, and records weight of grain prior to grinding. Adjusts plates in grinding machine, according to specifications, using hand tools. Opens valves and pushes switches on panel to start grinding machine and regulate flow of grain from hopper. Pumps ground meal into scale-hopper, and records difference in weight of material before and after grinding. Listens to operating machinery to detect malfunctions. Signals workers to clean or change screens on cleaning machine, to start and stop pumps, conveyors and machines, and lubricate machinery. Records production data.

May inspect carloads of whole grain to detect foreign material. May collect grain samples for laboratory analysis. May clean and grind grain for use in distilling and be designated accordingly, Grinder Operator, Distillery(distill., brew. & ferment.)

8211-130 CEREAL CLEANER(food & bev., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: 1 5 6 7 PA: M 4 7

Operates equipment to separate, clean, wash and moisten grain, such as wheat and corn, preparatory to milling to make breakfast food:

Starts conveyors to transfer grain to vibrating screens in grading and cleaning equipment. Sets thermostat of water heater at specified temperature. Turns valves and moves controls to regulate flow of grain and water through washer and drier machines. Transfers grain to soaking bin for tempering to increase moisture content of grain, according to temperature of batch and precise laboratory instructions, preparatory to milling. Monitors movement of material on conveyors and through screens, and removes blockages.

8211-134 FEED MIXER(feed & flour mill.) DPT:585
batch mixer, feed; travelling-scale operator.
GED: 3 SVP: 4 EC: 1 5 7 PA: L 4 7

Tends machines that collect, convey, weigh, mix, test and bag livestock and poultry feeds, by performing any combination of following duties:

Starts conveyor to transfer batches of prescribed grains or by-products from storage to scale bin and weighs batches. Adjusts size of dump openings to synchronize emptying of bins with rate of flow of grain into mixing unit. Starts mixing machine, elevators and conveyors to mix and transfer feed to storage or bagging-machine hoppers, using push-button control panel. Moves electric powered travelling-scale bin along tracks, using hand controls, to collect prescribed quantities of feeds from overhead bins. Sets markers on scale face to aid in measuring cumulative quantities of feed to be mixed. Moves levers to open chute of specified overhead bins to allow prescribed quantity of each feed to drop into scale bin. Moves loaded bin into position over mixer and opens chute to drop feed into mixer. Operates feed mixer during specified interval and discharges contents into conveyor system. Transfers molasses from drum through piping to heating unit and regulates heater temperature. Adjusts speed of conveyor, nozzles and valve controls to spray specified amount of molasses into moving feed. Examines feed periodically to ensure prescribed quantity of molasses is added and to correct any malfunctioning in conveyor system.

Weighs and premixes additives such as vitamin or mineral supplements according to formulas, using scale and mixing machine. Collects samples of raw materials and finished feed products for laboratory analysis, or tests moisture content of feed and durability of pellets. Places bag under hopper spout, fills, weighs and sews top of bag shut, using scale and portable sewing device. Records weight of feeds mixed or grains used.

May be designated according to type of feed mixed or according to ingredient mixed with feed; for example,

Dairy-Feed Mixer
Molasses Mixer
Poultry-Feed Mixer

8211-138 RICE-MILL WORKER(feed & flour mill.) DPT:585
GED: 2 SVP: 5 EC: I 5 PA: L 4 7

Tends machines that clean, mill, brush, grade and polish cargo (brown) rice, to produce finished rice, performing any combination of the following duties, working as member of a team:

Removes sample of brown rice from shipments received, and verifies grade of grain using test mill. Transfers rice by conveyor to storage bins, according to grade of grain, and records quantities received. Turns valves to open feed pipes to transfer specified grades and quantities of rice from storage to designated milling machines, such as hullers, separating machinery and cleaner, and presses control buttons to start machines. Turns wheels and valves to adjust feeder equipment and regulate air suction in aspirator to cool rice and remove bran. Presses control to start machine that mixes ingredients to make polishing solution and turns valve to transfer polish into rice-polishing machine. Observes rice passing through separating machines, and moves lever to adjust rice grader to ensure proper separation of grain to meet production requirements and quality standards.

May be designated according to specific duties assigned; for example, Floorman, Rice Mill
Hullerman
Rice-Grader Tender

8211-140 GRAIN-SAMPLE MILLER(feed & flour mill.) DPT:585
laboratory miller.
GED: 2 SVP: 4 EC: I 5 6 7 PA: M 4 7

Tends machines that clean, grind and sift small quantities of grain to prepare samples of flour for laboratory testing:

Pours grain sample into cleaning machine that removes chaff, dirt and undesirable seeds. Places grain sample in closed container, adds water to give standard moisture content, and allows grain to stand for specified time. Dumps grain into milling-machine hopper and grinds it into flour. Cleans mills with brush during and after each run to obtain maximum flour yield. Dumps flour into sifting machine to make standard flour samples. Weighs and dumps flour sample into container, and records identifying data and weight for laboratory information.

May add water to flour sample to make flour and water slurry and compare colour with standard chart.

8211-142 FLOUR BLENDER(feed & flour mill.) DPT:685
GED: 2 SVP: 4 EC: I 5 6 7 PA: L 4

Tends machines that sift, blend and convey flour:

Starts pneumatic-flow or screw-feed conveyors, or turns chute valves to transfer flour from milling machine or storage bins to mixing-machine hopper. Starts mixing machine and moves lever or control switch to transfer blended flour to sifting machine that removes lumps. Actuates conveyor controls to transfer sifted flour to packing-machine bins. Feels sifted flour to detect unevenness in texture that may indicate damaged screens. Hammers conveyor chutes with mallet to dislodge blockages.

May gather flour samples from machines for laboratory analysis. May tend machine which grinds flour.

8211-146 MASH DRIER(distill., brew. & ferment.; feed & flour mill.) DPT:685
dry-house operator.
GED: 2 SVP: 4 EC: I 3 4 PA: L 2 4 6 7

Tends press and associated drying equipment from control panel to make animal feed from fermented grain mash:

Actuates panel controls to pump mash from storage tanks onto filter

screens that strain liquids and discharge solids into powered roller press that extracts residual moisture. Transfers pressed feed by conveyor to hopper of feed-bagging machine or bulk loader. Monitors signal lights and meters on panel and listens for alarm signals. Observes gauges and operation of equipment at various locations in drying house, according to instructions. Cleans and sterilizes screens and rollers of press using steam and water hose. Shovels and sweeps up spillages in work area.

May tend oil-fired drier to dehydrate pressed feed prior to conveying it to bulk loader. May record production data.

8211-150 FEED GRINDER(feed & flour mill.) DPT:585
miller, feed.
GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends machines and related equipment to grind feed for livestock or poultry:

Opens chute to regulate flow of ingredients, and starts grinder rollers or hammer mill. Turns handwheel to adjust distance between rollers or adjusts control to regulate speed of mill, according to fineness required. Feels and inspects ground-feed sample to ensure conformity with grit and texture specifications, or sends samples to laboratory for analysis. Presses button to dump ground feed onto conveyors leading to scale tanks and specified storage or packing-machine bins. Records daily production of ground feeds.

May tend separator to clean grain prior to grinding, or to sift ground grain. May be designated according to type of machine used; for example,

Hammer-Mill Tender
Roller-Mill Tender

8211-154 DRIER TENDER, GRAIN(distill., brew. & ferment.; feed & flour mill.; food & bev., n.e.c.) DPT:585
dehydrator, grain.
GED: 2 SVP: 3 EC: I 5 7 PA: L 2 4 6 7

Tends drying equipment to remove moisture from grain, prior to storage or processing:

Turns valves to control heat in drier. Starts pumps, fans and conveyors that carry material through drier and auxiliary equipment such as filters, shakers and separators. Reads thermometers, gauges and recorders to monitor process and maintain specified operating conditions. Listens for alarm indicating excessive temperature. Observes conveyors transferring material and adjusts rate of flow into machines to meet requirements. Prevents or removes conveyor blockages. Observes dried material and tests with moisture meter to ensure conformity with standards, or sends sample of dried product to laboratory for analysis. Records instrumentation readings and other production data in log book.

May be designated according to material dried or kind of drier tended; for example,

Cleaner-Drier, Grain(feed & flour mill.; food & bev., n.e.c.)
Drum-Drier(distill., brew. & ferment.; feed & flour mill.)
Flash-Drier(feed & flour mill.; food & bev., n.e.c.)
Grain-Drier(distill., brew. & ferment.; feed & flour mill.)

8211-158 BOLTER(feed & flour mill.) DPT:665
GED: 2 SVP: 3 EC: I 5 6 7 PA: L 4 7

Tends sifting and purifying machines that separate flour, middlings or other fine grain products such as animal feeds, and screen out foreign material:

Opens spouts and adjusts feed slides to route flour or grain product to machines. Opens bags and dumps flour into sifter hoppers. Regulates flow of flour across sifters to avoid overloading and uses paddle to dislodge overloads. Feels sifted product to detect uneven texture resulting from breaks in screen or inadequate processing. Removes and replaces broken screens. Tallies weights of various grades of sifted products as indicated on automatic scales. Collects samples of sifted product for laboratory analysis.

May tend roll-grinding machine to make finely ground flour. May inspect dust-collecting equipment to detect malfunctioning. May remove metal and other foreign objects from scrap-removal devices. May be designated according to product separated, or machine tended; for example,

Feed Sifter
Flour Sifter
Middlings Purifier
Sifter Tender

8211-162 GRAIN CLEANER(feed & flour mill.) DPT:685
cleaner man.

GED: 2 SVP: 3 EC: I 5 6 7 PA: H 4

Tends machines that remove foreign matter, separate and dry grain preparatory to milling:

Dumps bags of grain into cleaning machine hopper or adjusts slides in bin spouts, and starts elevators to route grain from storage bins to machines. Turns valves to adjust air suction to remove dust and moisture from separators and to regulate flow of air through drier. Adjusts separator screens according to specified rate of flow and amount of refuse. Replaces damaged screens. Hooks bag under end of screen to catch refuse. Monitors flow of grain entering machines to prevent overloading. Inspects processed grain to ensure cleanliness. Pounds chutes with mallet to dislodge minor blockages and turns off elevators or conveyors for major stoppages.

May weigh and bag cleaned grain and rejected material and record weight of bagged material on tally sheet. May tend separating and cleaning machines to remove foreign matter from such products as macaroni, beans, peas, and spaghetti prior to processing. May be designated according to particular machine tended or type of grain cleaned; for example,
Seed Cleaner
Separator Tender

8211-166 FEED-PRESS MAN(feed & flour mill.) DPT:685
germ-press tender.

GED: 2 SVP: 3 EC: I 4 PA: H 4

Tends filter press to remove water from corn fibre and gluten, or oil from corn germ, used to make livestock feed:

Turns valves to control flow of material to press. Observes gauges for increased pressure which indicates need for cleaning presses. Turns valve to release ram and permit opening of press for cleaning. Inserts tool to lift and separate plates to free filter cloths. Pulls cloths, loaded with solids from press and shakes material onto conveyor, or brushes residue into pan for further processing into feed. Places clean filter cloths between plates and closes press.

May pump steepwater, as directed, to alter consistency of material being filtered. May cut new filter cloths, using scissors.

8211-170 FLOUR MIXER(feed & flour mill.; food & bev.,
n.e.c.) DPT:685
blender operator.

GED: 2 SVP: 3 EC: I 5 PA: M 3 4

Tends machines that mix and sift flour and ingredients to produce pre-mixed flours or special cereal products:

Turns dial of machine that blows measured amounts of various kinds of flour into mixer. Reads formula and dumps pre-weighed ingredients, such as buttermilk solids, phosphate, soda, sugar, and vitamin fortifiers into bin. Presses button to blow ingredients from bin into mixing machine, sifting unit and back to storage bins.

May change sifter screens using hand tools. May record amounts of ingredients in each batch. May be designated according to type of flour mixed; for example,

Pancake-Flour Mixer(food & bev., n.e.c.)

Ready-Mix Maker(food & bev., n.e.c.)

8211-174 GRAIN MIXER(feed & flour mill.) DPT:685

GED: 2 SVP: 3 EC: I 5 6 7 PA: L 2 4

Tends equipment that mixes grain preparatory to milling into blended flour:

Starts belt conveyor and adjusts valve controls on automatic feeders to regulate proportions and single specified grades of grain flowing from storage tanks onto conveyor. Starts conveyors to transfer mixed grain to milling department. Inspects grain visually, for smut, rust, or other contaminants. Determines and records weight of test bushel of mixed grain, using standard measure. Extracts samples of mixed grain from conveyor-chutes for laboratory analysis. Patrols conveyor systems to clear blockages and clean equipment.

May assist in weighing railroad carloads of grain.

8211-178 CUSTOM-FEED-MILL HELPER(feed & flour mill.) DPT:686

GED: 2 SVP: 3 EC: I 6 7 PA: VH 3 4

Helps miller to mix, bag and ship custom lots of animal and poultry feeds:

Fills designated bins with feed materials. Loads and mixes specified feed materials in mixing machine. Holds bag under automatic weigher and releases processed feed grain into bag. Closes top of bag, using machine stitcher. Loads specified number of bags, or positions chute leading to vehicle and releases bulk feed for shipment, by moving gate lever. See also definition for term title, 02-160 HELPER (any ind.).

8211-182 FEED BLENDER(feed & flour mill.) DPT:585
blender and packer.

GED: 2 SVP: 2 EC: I 5 7 PA: M 2 4

Tends mixing tubs that blend wet or dry ingredients used for animal feeds:

Turns valves to admit measured amounts of materials such as bran, gluten and steepwater (starch in solution) into tubs, or weighs and dumps specified quantities of dry grain products and supplemental materials into tubs. Starts paddle agitators. Feels sample of mixture to test consistency, or removes sample of blended product for laboratory analysis to ensure conformity with specifications. Pulls lever to open sliding gate and drain mixture from tubs, or dumps dry mixture into bags or barrels. Records daily production in log book.

8211-186 BOLTER HELPER(feed & flour mill.) DPT:685
flour purifier.

GED: 2 SVP: 2 EC: I 5 6 7 PA: L 3 4

Helps tend conveying equipment, sifters and purifiers that separate flour, middlings or other fine-grain products:

Opens slides in chutes and starts elevators to convey flour to sifters, purifiers and grinding machines. Adjusts purifier-feed valve to regulate flow of flour through chutes to purifier machine. Pounds on chutes with mallet to keep flour in motion. Brushes cloth sieves in sifters and purifiers to prevent clogging. See also definition for term title, 02-160 HELPER (any ind.).

May visually inspect middlings to verify or adjust settings of purifier machine controls. May collect samples from conveyors and bins for laboratory analysis, using sample cups.

8211-190 PELLET-MILL TENDER(feed & flour mill.) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machines that press ingredients into pellets for poultry and livestock feed:

Turns steam valves to regulate temperature of pellet-mill machine and materials. Observes ammeter and turns valves to regulate flow of material to machine. Adjusts flow of air to cool pellets in cooler. Adjusts nozzles to regulate flow of molasses into ingredients and turns steam valves to regulate temperature of molasses. Tends bucket elevator equipment or regulates flow of pellets down chutes, to transfer pellets to storage or packing areas.

May tend feed mixer to add molasses to ingredients.

8211-194 GRAIN-CLEANER HELPER(feed & flour mill.) DPT:686

GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Helps tend conveyors and separator machines for cleaning and drying grain:

Starts conveyors to carry grain to machines and equipment that clean, dry and separate grain from unwanted material. Pounds on side of elevator chutes with mallet to relieve stoppages. Adjusts machines to regulate flow of grain through screens. See also definition for term title, 02-160 HELPER (any ind.).

May fill bags or other containers with cleaned or processed grains and load containers onto vehicles for shipment. May position and hold chute over trucks or railroad cars to load with bulk grain.

Starch-Processing Occupations
8211-214 through 8211-262

8211-214 DRY-STARCH MAKER(food & bev., n.e.c.)

DPT:562

dry-starch operator.

GED: 3 SVP: 5 EC: I 6 7 PA: L 2 3 4 7

Controls equipment to mix chemical solutions with raw corn starch in suspension, and dry these mixtures to produce refined dry-starch blends:

Signals other worker to start pumps to transfer starch material into mixing or storage tanks and to dump or pour measured amounts of chemicals into mixing tanks. Reads specification charts and meters and turns valves to pump and blend solutions in tanks as specified. Actuates switches and turns valves to regulate heaters and mixing agitators and to pump starch mixtures into blending tanks and into drying equipment located on various levels or floors of building. Directs workers engaged in tending auxiliary processing equipment such as filters, shakers, centrifuges and driers. Observes gauges, thermometers and meters and inspects equipment to maintain standard production procedures. Draws samples of product and performs titration test to determine acidity or alkalinity of solutions. Tests solutions using hydrometer to ensure conformity with specifications. Records quantity and kind of chemicals used.

May grind and mix dried starches to make special starch blends and be designated accordingly,
Special-Starch Mixer

8211-218 DEXTRINE MAKER(food & bev., n.e.c.) DPT:682

GED: 3 SVP: 4 EC: I 7 PA: L 4

Controls operation of steam-jacketed cooker to convert mixture of corn starch and acid to dextrine paste or solution, for use in making adhesives, fillers and sizing:

Turns valve on control panel to open starch-feed gate or shovels starch into cooker. Opens valve to add amount of acid specified on chart to start conversion process. Injects live steam into cooker to accelerate reaction of starch. Switches on agitator to stir acidified starch while cooking. Observes temperature gauge and process to determine when conversion is completed. Turns valve to transfer dextrine to tanks for further processing.

8211-222 STEEPMAN(food & bev., n.e.c.)

DPT:565

steeping-tank tender.

GED: 3 SVP: 4 EC: I 7 PA: L 2 4

Tends steep tanks to soften corn prior to grinding, and to produce steepwater used for making various products:

Opens hatch and chute gate and signals other worker to load tank with corn. Turns valves and starts pumps to fill tank to specified level with steepwater. Observes thermometers and opens steam valves to heat contents to specified temperature. Tends sulphur burner or opens valve to inject sulphurous acid into steepwater. Tests specific gravity of steepwater using hydrometer, or sends sample to laboratory for analysis to determine when steeping process is complete. Starts pumps to draw off steepwater for further processing. Records production data and laboratory test results for each batch. Washes steep tank after each batch, using water hose.

8211-226 STARCH-CENTRIFUGE TENDER (food & bev., n.e.c.)

DPT:685

GED: 3 SVP: 4 EC: I 5 6 7 PA: L 2 4

Tends centrifugal separator and flotation cells that separate starch from gluten:

Turns valves and moves levers to control flow of steam, water, air and material into centrifuges and flotation cells, and to control temperature and specific gravity of material. Starts centrifuges to separate starch out of material and remove water from gluten. Inspects, cleans and lubricates equipment. Observes gauges and turns valves to maintain specified level of wash and dilution waters in supply tanks. May tend machine that washes separated, semi-refined starch.

8211-230 DRY-STARCH-MAKER HELPER(food & bev., n.e.c.)

DPT:585

starch-mixer-and-drier helper.

GED: 3 SVP: 4 EC: I 5 7 PA: M 2 4

Tends equipment to help mix and dry raw corn starch suspensions to produce dry-starch blends:

Dumps pre-weighed quantities of chemicals into mixing tank to prepare specified treating solutions. Observes signals from next work station, and manipulates switches and turns valves to start pumps, heaters and agitators, and admit raw starch and chemical-treating solutions into blending tanks. Transfers mixture to filters and driers. Observes thermometers and gauges to ensure efficient operation of equipment. Draws samples of mixtures and sends to laboratory for analysis. Feels starch being conveyed from driers to verify moisture content. Records production data. Flushes and cleans equipment, using water hose and cloths. See also definition for term title, 02-160 HELPER (any ind.).

8211-234 WHEAT-STARCH MAKER(food & bev., n.e.c.)

DPT:565

GED: 3 SVP: 3 EC: I 4 5 PA: L 2 4

Tends equipment that separates starch in liquid suspension with wheat flour, and purifies solution for conversion into sugar and glucose:

Flushes shaker screen containing wheat flour, using water hose to remove foreign matter and form crude starch suspension. Turns valves on various levels of plant to admit suspension and water to settling and rewash tanks in which lighter impurities rise to surface, forming scum (brown starch). Turns valves to transfer scum to starch tables and settling tanks, to separate out white starch. Pumps white starch into vat, starts agitator and adds water to form white-starch suspension. Adds measured amounts of specified chemicals to further purify product. Removes samples of mixture from vat, sends to laboratory for analysis, and records results. Turns valves and starts pumps to transfer solution to storage tanks preparatory to conversion into sugar and glucose. Dismantles, cleans and reassembles piping and equipment using hand tools. Cleans work area using brush, mop and water hose.

8211-238 GERM-SEPARATOR(food & bev., n.e.c.) DPT:585

GED: 3 SVP: 3 EC: I 5 7 PA: L 2 4

Tends flotation machine to remove germs (embryos) from cracked grain:

Determines specific-gravity suspension of cracked-grain in steepwater, using hydrometer and charts, according to grain being processed. Turns valves at various levels of plant to add grain or steepwater to attain required density of grain suspension. Starts machine that agitates suspension to permit oil-laden germs to rise and float on surface. Turns valve to add liquid of specified density to cause remaining germs to float and to test residue for presence of germs. Removes floating germs using skimmer. Collects and sends samples of material to laboratory for analysis. Records production data. May turn valves to regulate flow of materials to reels and shakers to remove bran and other fibres from starch suspension. May separate germs from cracked grain using hydrocyclone (centrifugal cleaning equipment).

8211-242 MILLER, WET PROCESS(food & bev., n.e.c.)

DPT:685

GED: 2 SVP: 4 EC: I 5 7 PA: L 4

Tends mills that crack and grind steeped or degerminated grain, such as corn, to facilitate separation of starch, bran and gluten:

Turns hand wheels and moves levers to regulate spacing of buhrs (grindstones) and to control flow of grain through gates. Opens valve to start flow of liquid starch into mill to flush buhrs and separate materials. Feeds ground grain to ensure desired fineness is attained. May signal millhouse workers to ensure continuous flow of material to grinding mill. May tend shakers or filters to wash and remove residual starch and gluten from ground grain, and wash filters using water hose.

8211-246 NEUTRALIZER(food & bev., n.e.c.)

DPT:684

GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Neutralizes corn-starch liquor preparatory to making glucose:

Weights prescribed amount of soda ash on scales and dissolves it in container of water. Pours solution into neutralizing tank containing corn-starch liquor and starts agitator. Obtains sample from tank and holds it up to light to detect formation of precipitate. Adds soda-ash solution, as required to form precipitate. Pumps neutralized liquor to holding tank.

May tend filter press to purify neutralized liquor. May acidify and

neutralize raw starch in solution, to make starch products on batch basis, according to formulas.

8211-250 STARCH SEPARATOR(food & bev., n.e.c.) DPT:585
GED: 2 SVP: 3 EC: 1 5 PA: M 2 4

Tends reels and shakers that separate and remove bran, gluten, or other insolubles from starch suspension:
Starts reels or shakers and turns valves to admit and regulate flow of liquid-starch suspension. Starts conveyor that carries off insolubles separated from suspension. Takes samples of liquid starch and tests specific gravity, using hydrometer, or sends sample to laboratory for analysis. Cleans shakers or reels with cleaning solution, water hose, rag and brush. Replaces worn or broken bearings, springs, and other parts, using hand tools. Records production data.
May maintain level of starch-supply tanks to shakers. May be designated according to type of separator tended,
Shaker Man

8211-254 BREAKERMAN(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 4 5 PA: L 2 4

Tends equipment to maintain specific gravity of starch suspensions emerging from filter machines and starch-flushing system, and transfers solution for conversion into sugar and glucose:
Dips sample of starch materials from breaker tank and sends to laboratory for analysis. Turns valves to return suspensions for reflushing if density does not meet standards. Starts agitators in tank to prevent starch from settling. Turns valves and starts pumps to transfer solution to storage tanks. Cleans work area and floor using water hose and mop.

8211-258 STARCH WASHER(food & bev., n.e.c.) DPT:685
filterman, starch.
GED: 2 SVP: 3 EC: 1 4 5 7 PA: L 4

Tends filtering and washing equipment that separates cornstarch from undesirable protein solids:
Starts washing machine and turns valves to admit starch suspension from storage tank through filters, or transfers dry starch from storage tank into machine for specified washing process. Turns valve to control flow of wash water to filter-spray nozzles. Separates washed starch from water by pumping starch suspension through separator machine, and then into rotary drier to remove excess moisture. Reads thermometers and adjusts steam valve to maintain specified temperatures. Controls flow of water into standardization tanks to regulate specific gravity of starch suspension as determined by hydrometer and charts. Changes damaged filter cloths, using hand tools, and flushes soiled cloths with water hose. Clears obstructions in spray nozzles by inserting wire probe.
May invert filter boxes to remove solid starch cakes, or shovel out starch on to handtruck preparatory to further processing.

8211-262 GLUTEN-SETTLING MAN(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 4 7 PA: M 2 4

Tends settling tanks that separate gluten from water:
Turns valves to discharge gluten and water from starch tables into tank. Adjusts inlet and outlet valves to maintain constant level in tank until water has drained from settled gluten. Starts pump that transfers gluten to plate press. Pushes remaining gluten from tank into drain outlet, using squeegee, and cleans tank with water hose.
May weigh and dump required amount of acid to acidify raw starch solutions according to formula, preparatory to cooking.

Vegetable-Oil Processing Occupations
8211-282 through 8211-302

8211-282 EDIBLE-OIL REFINER(animal & veg. oil) DPT:562
GED: 3 SVP: 7 EC: 1 4 5 6 PA: M 2 4 7

Controls equipment that refines vegetable oils for use in preparing foods:
Weighs, measures and compounds refining and neutralizing agents in mixing vessels, as specified by work orders. Actuates panel controls to

start pumps, and sets valves as specified, to adjust temperatures and pressures for equipment operation. Transfers oil and caustic solution from storage tanks through scale tank into neutralizer or other machine tank. Pumps refining agent into tank to separate free fatty acids (caustic-formed soap stock) from oil by mechanical or chemical action. Verifies neutrality of soap stock by titration, and pumps soap stock to holding tank. Sets thermostat, and observes gauges and regulates valves to maintain prescribed temperatures and pressures. Turns valve to pump mixtures to washing and drying tanks to remove by-products and impurities. Removes sample of oil for laboratory analysis, and reprocesses material as indicated by test results. Turns valves to pump refined oil to storage tanks. Cleans equipment and work area using steam, hot water, scrapers and rags. Records production and shift data in log book.

May pump oil through vacuum-heating equipment and inject superheated steam into oil to remove odours. May bleach oil by adding filtering agent, starting agitators and pumping oil through filter presses to cooling tank. May chill and filter oil to remove stearins. May unload crude oil and caustic from incoming tank cars into storage tanks and ship refined oil and soap stock. May be designated according to kind of oil or process used; for example,
Bleacher Operator
Deodorizer Operator
Peanut-Oil Refiner
Winterizer Tender

8211-286 VEGETABLE-OIL EXTRACTOR(animal & veg. oil) DPT:682
GED: 3 SVP: 6 EC: 1 5 6 7 PA: M 2 3 4 7

Controls machines that extract edible oils and by-products from oilseed, such as soybean, cotton seed, and corn germ:
Tests samples of incoming seed for moisture content, using analyzer to determine degree of drying required and machine settings for optimum rate of production of rolling, drying, cooking and oil expelling machines. Sets control mechanisms on seed-flattening rollers or oil-exPELLER machines. Sets temperature and air controls of driers to attain specified quantity and dryness of output. Turns steam valve of heater to cook dried oil seed or germ. Presses buttons to start machinery and turns gate valve to admit seed material. Observes temperature gauges, flowmeters and machinery during operation. Examines processed materials such as seed meats, seed hulls and dried germ, for adequate cracking, de-hulling, separation and oil extraction, and makes adjustments to machine controls as required.
May direct workers taking samples, bagging products for shipment, and cleaning, maintaining and repairing machines.

8211-290 VEGETABLE-OIL EXTRACTOR, SOLVENT PROCESS(animal & veg. oil) DPT:582
GED: 3 SVP: 5 EC: 1 7 PA: L 2 4

Controls solvent-method extraction equipment to remove oil from crushed, or partly processed soybeans, sunflower seed or rapeseed:
Sets and adjusts controls on various levels of plant, to regulate temperature and flow vegetable material and solvent through oil of extracting and purifying equipment. Reads thermometers, pressure gauges and flowmeters to monitor process. Tests samples of material for conformity with standards, using scales, moisture meter and hydrometer, or by titration, or sends samples of material to laboratory for analysis. Records process and quality-control data.
May clean filter plates of extraction equipment, using scraper. May tend machines to press solid vegetable residue into pellets, and bag pellets for use as animal feeds.

8211-294 WEIGH-TANK TENDER(animal & veg. oil) DPT:585
edible-oil pumper.
GED: 3 SVP: 3 EC: 1 4 6 7 PA: M 4 7

Tends equipment to weigh and transfer oils and other ingredients used for making margarine or shortening, following standard formulas:
Inspects tanks and valve positions. Passes pressurized steam through system to verify flow pattern and find leaks. Starts pump and turns valve to admit oil or other ingredients through filter unit into scale tank until specified weight has been reached. Positions weights on scale bar to weigh smaller batches of ingredients. Turns valves to transfer weighed ingredients from scale tanks for processing or storage. Turns valves to admit steam into tanks to agitate, wash and

mix oils. Measures and records weight and temperature of filtered oils in holding tanks, reading thermometer and charts, and using dipstick. Cleans pumps, screens and pipe systems by flushing with hot water, and cleans equipment and work area using steam hose and scraper. Prepares daily production reports.

8211-298 CORN-GERM PREPARER(animal & veg. oil) DPT:685

GED: 2 SVP: 3 EC: I 5 6 PA: L 4

Tends machines that prepare corn germs for oil extraction: Presses button to start machine and turns valves to inject steam into dried corn germs to soften hulls. Observes steam gauges and thermometers and adjusts controls to keep temperature and pressure within specified limits. Shovels fallen corn germs back onto drier conveyor leading to steam-injection machine. Washes machine, using rags and water-hose.

8211-302 EDIBLE-OIL-REFINER HELPER(animal & veg. oil) DPT:587

GED: 2 SVP: 2 EC: B PA: H 2 3 4

Helps edible-oil processors to refine crude vegetable oils, by performing any combination of the following duties: Starts machines and adjusts processing-equipment controls as directed. Collects samples of seed, prior to processing, from trucks and railroad cars, using sampler probe. Fills cans with samples of material at various stages of processing for quality-control inspection or analysis. Packages seed meal by placing sack beneath automatic scales and releasing lever to fill bag, closes top of bag, using machine sitcher, and places bag on conveyor. Positions loading chute over railroad cars or trucks, or makes tank-car connections. Loads handtruck and moves filled bags to shipping area. Weighs bags on scales, and records quantity and weight of shipment. Cleans filters, chutes and feeders, and oils machinery. See also definition for term title, 02-160 HELPER (any ind.).

8213-BAKING, CONFECTIONERY MAKING AND RELATED OCCUPATIONS

This unit group includes occupations concerned with making bakery products such as breads, cakes, pastries; dried-food pastes such as macaroni and noodles; cooked cereals; and confectionery products such as chocolate and cocoa confections, candies, chewing gum, popcorn, roasted and salted nuts. Includes activities such as baking, blending, coating, cooking, decorating, drying, kneading and rolling. Chefs and cooks are classified in Unit Group 6121, CHEFS AND COOKS. Occupations concerned with preparing raw chocolate are classified in Unit Group 8229, FOOD, BEVERAGE AND RELATED OCCUPATIONS, N.E.C.

Baking, Cereal Making, Dried-Food-Paste Making And Related Occupations

8213-110 through 8213-222

8213-110 CAKE DECORATOR(bake. prod.) DPT:684
ornamenter.
GED: 4 SVP: 6 EC: I PA: L 4 7

Decorates cakes and pastries with coloured icings or pastry cream: Screws nozzle of specified size and shape into outlet of decorating bag. Fills icing bag with icing or pastry cream, using scoop. Squeezes bag to force material through nozzle forming decorations, such as lines, letters, figures or flowers. Spreads material with brush, finger-pronged instrument or spatula. Packages decorated cakes in cartons, using staples to secure cartons. May cut and shape cake to size, using knife. May mix icing. May be designated according to product decorated; for example, Wedding-Cake Decorator

8213-114 BAKER(bake. prod.; cater. & lodg.; food and bev., n.e.c.) DPT:461
GED: 3 SVP 6 EC: I 3 6 PA: M 3 4

Prepares ingredients and bakes bread, cakes, cookies, pies, and specialty foods according to recipes: Requisitions ingredients from storeroom and measures out specified quantities, using scales, measuring cups and spoons. Mixes ingredients to form batter or dough, using electric mixer or by hand. Shapes dough, using pie-dough roller or cookie cutters, or by hand. Places shaped dough portions in greased or floured pans, and inserts them in oven, using peel. Adjusts drafts or thermostatic controls to regulate oven temperature. Cleans and adjusts machines and equipment between production runs. Prepares ingredients and cooks pie fillings, puddings, custards, icings or other desserts and baked specialties. Tastes food to determine conformity with flavour specifications. May tend continuous-process machines that roll, cut and bake specialty foods such as tortillas. May perform supervisory duties in absence of head cook or baker. May bake a particular product and be designated accordingly; for example, Baker, Biscuit Baker, Bread Baker, Specialty Foods Pastry Chef

8213-118 CRACKER-AND-COOKIE-MACHINE OPERATOR(bake. prod.) DPT:682
GED: 3 SVP: 6 EC: I PA: M 4

Operates machine that rolls dough into sheets and forms crackers or cookies preparatory to baking: Turns crank to adjust space between rollers. Selects and installs stamping or extruding die in machine, according to work order, using wrench. Starts machine and inserts end of dough from hopper into roller. Observes operation and removes malformed cookies or crackers. Verifies weight of raw samples against standards, using balance scale. Scoops such ingredients as salt, sugar and nuts into hoppers located along conveyor belt. May tend machine that sprays crackers with oil to impart colour and prevent drying out, by pushing button to pump oil into reservoir and adjusting steam valve to heat oil to specified temperature. May weigh sampling of crackers to measure amount of oil being applied.

8213-122 BENCH HAND(bake. prod.) DPT:684
GED: 3 SVP: 6 EC: I PA: M 4

Forms dough for bread, buns and other bakery products by hand: Rolls dough to desired thickness with rolling pin, or guides dough through rolling machine. Sprinkles flour on dough and workbench to prevent sticking. Kneads dough to eliminate gases formed by yeast. Cuts dough into pieces with knife or band cutter. Adds spices, fruits, or seeds when making special rolls or breads. Weighs pieces on scales and keeps record of production. Places dough in baking pans. May cut dough into bun divisions by machine. May form dough into special shapes and add fillings or flavourings. May feed empty pans onto conveyors feeding dough-forming machines, and remove pans from conveyor after baking is completed.

8213-126 ROASTER, GRAIN(food & bev., n.e.c.) DPT:585
cooker, grain.
GED: 3 SVP: 6 EC: I 3 PA: L 4 7

Tends equipment that partly roasts and cooks milled grain preparatory to making breakfast foods: Lights gas jets under drum or pan, adjusts temperature regulator to required setting, and starts conveyor to transfer specified amount of grain to batch-scale bin for weighing. Moves control to transfer grain to drum or pan, and starts agitator that prevents sticking of grain to sides of vessel and ensures uniform roasting of grain. Moves lever at specified time to dump roasted grain into conveyor leading to cooling tower and tank. Records batch numbers and other production data. May admit metered quantity of water to drum, and start vacuum drying and roasting of cooked grain for specified time.

8213-130 NOODLE PRESSMAN(food & bev., n.e.c.) DPT:681
macaroni pressman.
 GED: 3 SVP: 5 EC: I 4 6 PA: M 4 7

Operates machine that blends ingredients and kneads, extrudes and cuts dough used for making products such as macaroni and noodles: Installs specified die in press, using hand tools. Adjusts press rollers to regulate thickness of dough, using micrometer and hand tool. Dumps pre-measured quantity of eggs into tub, sets meter and turns spigot to admit prescribed amount of water. Starts beater to mix eggs and water for specified time. Observes colour of dough and feels its consistency to ensure product conforms with specifications. Starts pump to transfer mixture to mixing unit of machine. Opens hopper to admit specified quantity of flour into mixing unit and starts mixer and press to knead and extrude dough. Turns screw to set speed of knives to cut product to specified length for drying.

May patrol drying chambers to observe temperature and humidity chart readings for variances from drying procedures, and report observed deviations to production manager. May record production data.

8213-134 ALMOND-PASTE MAKER(confection.) DPT:682
marzipan maker.
 GED: 3 SVP: 5 EC: I 6 PA: M 4

Controls equipment that grinds, blends and cooks almonds, sugar and essences to make almond paste:

Feeds almond and sugar mixture between series of rollers and turns handwheels to progressively decrease clearance between rollers. Weighs and dumps specified quantities of blanched, ground almonds and sugar solution or sugar crystals and colouring essences into mixer. Starts mixer and mixes ingredients for specified time. Dumps mixture into steam-jacketed rotating cooker for required time and transfers cooked batch to water-cooled kettle.

May collect trays of surplus paste from chocolate filling machine, and feed surplus paste through heated rollers to process paste for re-use.

8213-138 CEREAL-COOKER-AND-EXTRUDER OPERATOR(food & bev., n.e.c.) DPT:682
 GED: 3 SVP: 5 EC: I 3 5 6 PA: L 4 7

Operates variety of machines such as dough mixer, continuous cooker and extruding press to produce cereal pellets of various shapes:

Cleans and installs perforated metal die, having various shaped openings, into extrusion-press-discharge outlet. Attaches blade that shears off product at discharge outlet, using wrench. Adjusts controls to regulate flow of water and other ingredients into mixing machine. Turns valves to supply steam and moisture to cooker. Regulates pressure controls to force mixture through cooker and into extrusion press to maintain specified moisture content, colour and consistency of product. Starts extrusion press and cutting blade to extrude dough and form pellets. Observes and feels pellets and adjusts controls, using knowledge of materials and equipment to produce standard cooked products.

May observe extruder and cutter action through stroboscope to avoid interrupting continuous process. May operate conveyor to transfer pellets to coating drum.

8213-142 OVENMAN(bake. prod.) DPT:682
 GED: 3 SVP: 4 EC: I 3 PA: M 4 7

Controls oven to bake bread and other bakery products:

Loads trays of bread or other bakery products from dollies and places them on conveyor belt leading to oven. Observes temperature and pressure gauges and turns valves to maintain oven heat and humidity at prescribed levels. Governs speed of conveyor to regulate baking time. Observes appearance of products during baking process to verify uniformity of finish. Removes trays of baked products from oven and places them on dollies.

May load and unload ovens manually, using peel. May weigh cookies and count number per pound to ensure weight standards are met. May be designated according to type of oven tended; for example, Conveyor Ovenman
 Reel Ovenman

8213-146 GUNNER(food & bev., n.e.c.) DPT:682
puffed-cereal maker.
 GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Controls equipment that expands or puffs whole grain, such as rice or wheat to produce breakfast cereals:

Presses button to admit preheated moist grain and water to heated pressure cylinder. Clamps lid in place and starts rotation of cylinders. Turns valves and moves controls to regulate air pressure and temperature inside cylinder to obtain kernels of specified colour, size and uniformity. Actuates automatic cycle by which lid is removed from cylinder after specified time allowing grain to expand as it escapes from cylinder. Starts fan systems to blow puffed grain to air-powered separator unit, inspection station and storage bins. Examines product visually and by feeling to determine need for adjustments to process conditions.

May operate automatic boiler that generates steam for processing grain and an oven that preheats grain.

8213-150 COOKER, GRAIN(food & bev., n.e.c.) DPT:585
 GED: 3 SVP: 4 EC: I 3 6 PA: L 4 7

Tends steam-heated pressure cookers to cook grain for further processing into cereal products:

Presses button to load cookers with measured amount of grain, and flavours such as salt, malt and sugar. Clamps lid of cooker in place. Moves dials and turns valves to attain specified temperature and pressure in cooker according to type of grain. Removes lid of cooker and dumps cooked grain onto conveyor, after determining that grain has reached specified colour and consistency. Records cooking time, temperature and number of batches prepared.

May start automatic equipment that admits steam, rotates cooker and stops cooker after specified time. May tend drier to temper (dry) grain to the correct level to produce an even humidity content throughout the kernel.

8213-154 OVEN TENDER, CEREAL(food & bev., n.e.c.) DPT:585
 GED: 3 SVP: 4 EC: I 3 6 PA: L 4

Tends ovens and related equipment that cook and toast cereal products such as flakes, biscuits, and pellets:

Lights gas burners and moves control levers to attain specified temperature in ovens. Starts conveyors or rotating wheels that move cereal product through oven. Inspects and feels products emerging from oven, to ensure colour, blister and consistency or shape conforms with specifications, and rejects unsuitable product. Adjusts gas-control lever, speed of conveyors and opens or closes doors on side of oven. Pushes lever to direct unsuitable product into bin. Records bulk and production rate of product, weight and time required to fill container.

May inspect product as it enters oven. May push button to actuate banks of grain shredders and biscuit-forming machines. May adjust or clear belts, stops and rolls to remedy mechanical defects. May position conveyor gates to reroute tempered grain back to tempering bins when moisture penetration is incomplete.

8213-158 DEPOSITING-MACHINE TENDER(bake. prod.) DPT:685
icer, machine.
 GED: 3 SVP: 4 EC: I PA: L 4

Tends machine that deposits filling, icing or topping on confectionery products:

Installs specified nozzles in machine, using wrench. Starts pump to load machine hopper with filling. Starts conveyor to position cookies under nozzles. Turns valve to deposit specified amount of filling on cookies. Pulls lever to feed product under refrigerated roller to spread filling over cookies. Wipes filling from roller, using wet cloth. Verifies weight of cookies on scale. Cleans filling hopper between production runs. Inspects cookies emerging from machine to ensure that they meet specifications.

May assist in feeding cookies into machine. May melt and temper chocolate. May be designated according to product iced.

8213-162 FLAKING-ROLL TENDER(food & bev., n.e.c.)
DPT:685

GED: 3 SVP: 4 EC: I 5 6 PA: L 4 7

Tends machine equipped with rollers that form cooked grain into cereal products of various shapes:

Actuates controls to start rollers and conveyor to transport cooked grain to roll feeders. Turns handwheels and sets valves to adjust spacing, pressure and temperature of rollers to obtain specified thickness and consistency of formed product, as indicated by touch and visual inspection, and to control flow of grain through feeding mechanism. Replaces worn knives used to scrape cooked grain from roller surfaces, using hand tools.

May roll and form a particular cereal product and be designated accordingly; for example,
Roller, Corn Flakes

8213-166 BATTER AND DOUGH MIXER(bake. prod.)
DPT:685

GED: 3 SVP: 4 EC: I PA: M 4

Tends machines and equipment to mix batter for making sweet products such as cakes, or to mix dough for making bread products, according to formulas:

Positions mixing bowl under mixer and attaches water hose to water meter. Actuates controls and turns valves to adjust metering devices that weigh or measure water, flour and shortening into mixer. Measures and dumps yeast, vitamins, sugar, salt and other ingredients into mixing machine. Sets machine to mix for specified time and regulates speed according to directions. Feels dough to ensure consistency meets desired standards. Dumps dough into trough or pours batter into buckets and transports buckets to cooking area. Pushes troughs of dough into fermenting room to rise for making sponge dough. Dumps sponge dough into mixer, using hoist, adds ingredients and starts machine to complete mixing cycle.

May tend automatic machine that mixes and drops bread ingredients into pans preparatory to baking. May compile data from work orders and conversion tables to establish quantities of ingredients required for production. May set controls, fill dispensing units and start automatic machine that rolls (sheets), curls, and cuts sweet goods into specified size and weight for baking, to make rolls, coffee cake and other sweet goods.

8213-170 DOUGH-KNEADING-MACHINE TENDER(bake. prod.)
DPT:685
dough-brake-machine operator.

GED: 3 SVP: 4 EC: I PA: M 4

Tends machine that kneads dough to desired texture:

Fills hopper with flour that automatically sprinkles roller and catching apron of machine with flour to keep dough from sticking or sprinkles flour by hand. Starts machine and turns handwheels to adjust distance between rollers. Cuts off lump of dough in trough and inserts dough between rollers. Catches dough as it extrudes from machine and re-inserts it at different angles until texture reaches desired consistency.

8213-174 DOUGHNUT-MACHINE TENDER(bake. prod.)
DPT:685

GED: 3 SVP: 4 EC: I 3 6 PA: M 4 7

Tends machines that mix dough, and form, fry and glaze doughnuts: Slides block of ejectors (cutters) into machine and tightens them with wingnuts. Starts machine. Turns switch to heat frying tank to desired temperature. Mixes prepared ingredients with specified amount of water in mixing machine to form batter. Dumps batter into doughnut machine hopper manually. Turns and adjusts valves to control air pressure for ejecting batter into frying tank and to regulate size of doughnuts, temperature and feed of grease, and speed of conveyor. Observes colour and verifies weight of doughnuts to ensure conformity with standards. Cleans doughnut machine and appliances to keep them in good working order by dismantling and washing their component parts.

May melt and temper chocolate preparatory to icing doughnuts. May tend automatic cooking machine that fries doughnuts and equipment that glazes doughnuts with icing, syrup or sugar. May package and sell doughnuts and receive payment from customers.

8213-178 PRETZEL BAKER(bake. prod.)
DPT:685

GED: 3 SVP: 4 EC: I 3 PA: L 3 4 7

Tends automatic machines that mix, cut, twist, cook, salt, bake and dry dough to make pretzels, performing any combination of the following duties:

Adjusts rolls and cutters of machine to shape dough to specified dimensions. Loads dough into machine hopper and starts pretzel-forming machine. Observes progress of dough in machine to detect off-standard product or blockages, and clears blockages. Lights oven and sets thermostatic controls of cooker, oven and kiln at specified temperature. Dumps specified amounts of ingredients such as salt, soda and water into hoppers of oven. Observes progress of uncooked pretzels on moving conveyor to oven and straightens product using wire-hooked rod. Tastes baked pretzels, observes their colour and adjusts conveyor speed or temperature of cooker, oven and kiln to ensure conformity to standards.

May place unbaked pretzels on oven conveyor by inverting boards loaded with pretzels.

8213-182 INGREDIENTS SCALER AND DISPENSER(bake. prod.; confection.)
DPT:464

ingredients assembler; pantryman.

GED: 3 SVP: 3 EC: I PA: H 4 7

Measures, weighs, assembles and issues ingredients according to batch formulas, for use in making bakery and confectionery products:

Reads production orders and selects appropriate recipe cards. Weighs specified dry baking or confectionery ingredients on scales, and pours required fluid ingredients, such as flavouring extracts and syrups, into graduated containers. Attaches identifying label and recipe card to containers of measured ingredients and places containers, assembled by batches, on dollies for issue to other workers. Records number and kinds of batches assembled. Verifies kinds and quantities of incoming supplies of ingredients, and directs workers to dump bulk supplies into appropriate storage containers.

May dump batches of ingredients into mixing bowl. May test sample of finished batch to ensure conformity with standards.

8213-186 ICING MIXER(bake. prod.)
DPT:685
filler mixer.

GED: 3 SVP: 3 EC: I PA: H 4

Tends equipment that mixes ingredients for icings or fillings for bakery products:

Weighs and measures ingredients, such as sugar, chocolate, food colouring, ground fruit and fat or shortening according to recipe. Dumps bags of sugar and other ingredients into mixing bowl. Starts machine. Pours measured amount of water from container into mixing bowl. Observes and feels mix to determine when desired consistency has been reached. Cooks some types of fillings in steam-jacketed kettles. Cleans mixing equipment and work area between batches. Selects and installs beater arms in mixing machine, using wrench.

May tend equipment that mixes and conditions chocolate and other ingredients to make icing. May transport icing to enrobing machine using buckets. May transport boxes of ingredients to work station using hydraulic-lift truck. May be designated according to product mixed or cooked; for example,

Chocolate-Icing Mixer

Cooker, Pie Filling

Fruit Mixer

Pie-Filling Mixer

8213-190 CONE-AND-WAFER-MACHINE TENDER(bake. prod.)
DPT:685

GED: 2 SVP: 4 EC: I 3 PA: L 4 7

Tends machine that automatically deposits and bakes batter in moulds to form wafers or cones:

Lights gas burners to heat baking moulds. Pushes button to start machine and turns setscrew to regulate amount of batter deposited in mould. Turns thermostat to adjust temperature of baking moulds and speed of conveyor. Observes colour of baked wafers being ejected onto conveyor to detect defects. Makes adjustments and minor repairs to wafer-and-cone oven. Changes parts to switch machine from cone to wafer production.

May weigh and mix batter in high speed mixer.

8213-194 ICER, HAND(bake. prod.) DPT:684
icer, baker.
GED: 2 SVP: 3 EC: I PA: L 4 7

Covers baked goods with icing or frosting by hand:
Spreads icing evenly over surface of baked goods by hand and using spatula, or cloth funnel filled with icing. Builds up layer cakes by spreading icing or filling between layers and then icing outer surface. Applies glaze or thin icing to sweet rolls, fruit cake, specialty breads, and other items, using brush, spatula or knife. Places small pieces of fruit on fruit cakes to form simple design.
May pack iced products in cartons. May be designated according to product iced; for example,
Bread Icer
Cake Icer
Roll Icer

8213-198 PIE MAKER, MACHINE(bake. prod.) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4

Tends machines that shape, flatten, cut dough and automatically fill pies, performing any combination of the following duties:
Loads dough into hopper of pie-dough scaling machine. Turns hand lever to adjust scaling cylinder of machine to produce lumps of dough of prescribed size. Removes lumps of dough deposited from scaling machine and places them in dough-rolling-machine hopper. Turns hand lever to adjust rollers of machine to produce dough disks of desired thickness. Catches dough emerging from rolling machine and places it in pie pan on rotating platform. Fills hopper of automatic pie filling machine with pie filling or fills pies by scooping filling from container. Catches dough disk emerging from rolling machine and places it over filled pies. Perforates pie covers to identify filling, using knife. Lifts pies from rotating platform and places them on rack or cart. Cleans machines and equipment used, using hand scraper, water and brushes.

May tend machine that forces dough through feed tube to cut-off mechanism and deposit tart shells, filling and topping into aluminum cups to make tarts. May be designated according to phase of operation performed; for example,
Pie-Dough Roller
Pie Filler
Pie Topper
Tart Maker

8213-202 COATING OPERATOR, CEREAL(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 3 6 PA: L 4 7

Tends coating and drying equipment that sprays cereal products such as flakes, puffed grain or extruded puffed cereal with syrup or coating mixture:
Lights gas burners or turns steam valves to attain specified temperature in drier and syrup kettle or storage tank. Moves controls to start revolving drum and conveyor that feeds cereal products into drum and through drier. Starts pump to spray liquid from storage tank onto cereal products in drum. Adjusts speed of conveyor and drum to coat cereal to specified thickness as indicated by feel, colour, weight or measure.
May make syrup in kettle by combining specified amounts of water and sugar, and observing kettle thermometer to determine when syrup is ready for spraying. May clean storage tank and supply lines.

8213-206 CURING-BIN TENDER(food & bev., n.e.c.) DPT:685
tempering-bin operator.
GED: 2 SVP: 3 EC: I PA: L 4

Tends curing or tempering bins that spread moisture uniformly through cooked grain before being shaped into breakfast cereal, such as flakes or shredded biscuits:
Opens gate in conveyor duct to deflect incoming grain into first bin. Closes gate when bin is full, records time, and repeats filling operation with next bin. Squeezes soaked grain between fingers to determine moisture content of kernels, and checks that specified curing time is completed for each bin. Pulls lever to dump grain onto conveyor. Dislodges remaining grain from bin, using pole, or spray washes it down.
May start and stop water-spray units, fans or conveyors. May weigh grain and record weight.

8213-210 DIVIDING-MACHINE TENDER(bake. prod.) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4

Tends machines that automatically divide, round, proof and shape dough into units of specified size and weight preparatory to baking:
Starts machines and turns handcrank to set capacity of dividing compartments and speed of conveyor on dividing machine. Weighs units of dough, using balance scale and adjusts machine as required. Scoops flour or starch into hopper of sifter which automatically dusts units of dough to prevent sticking. Observes progress of units through machines that automatically divide, round, proof and shape dough. Turns rheostats to control speed of proofing-and moulding- machine conveyors. Inspects shaped units of dough as they are ejected into pans from moulding machine. Cleans moulding machines, using scraper and water. Oils conveyor rollers and machines as required.
May be designated according to machine tended; for example, Moulder-Panner Operator

8213-214 SLICING-MACHINE TENDER(bake. prod.) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4

Tends machine that slices bakery products, such as bread and cakes:
Installs and tightens cutting blades and adjusts guides of machine to accommodate size of product to be sliced, using wrench. Starts machine and monitors slicing or product transported on conveyors.
May place product on conveyors to slicing and wrapping machines.
May be designated according to machine tended or product sliced.

8213-218 BAKER HELPER(bake. prod.; cater. & lodg.) DPT:686
GED: 2 SVP: 3 EC: I 3 6 PA: H 3 4

Assists baker in the production of baked goods, performing any combination of the following duties:
Moves and distributes bakery supplies and products in and around production area of bakery, using hand trucks, dollies, and rack trucks. Lifts and dumps containers of materials to help load and unload machines, bins, hoppers, and racks. Cleans equipment, using brushes, cleaner and water. Greases, lines or dusts pans or boards preparatory to receiving product for baking. Mixes, kneads, or shapes dough for bread, rolls, muffins or biscuits. Cuts dough into uniform portions by hand or machines. Places pans of dough into oven to bake. Removes baked products from oven. Trims excess product from moulds and removes products, such as wafers, from opened moulds. See also definition for term title, 02-160 HELPER (any ind.).
May be designated according to specific duties performed; for example,
Cookie-Mixer Helper
Dough Weigher
Pan Greaser, Hand
Wafer Trimmer

8213-222 BATTER-DEPOSITOR TENDER(bake. prod.) DPT:685
cake depositor.
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that deposits measured amount of batter into baking pans as they pass on conveyor:
Dumps batter from mixing bowl into machine hopper, using hoist. Attaches depositing dies to machine and tightens with wrench or by turning knurled knobs. Adjusts gauge on hopper to measure specified amount of batter. Weighs empty and filled pans on balance scale to ensure conformity to standards.
May remove filled pans from machine and place on racks.

8213-226 NOODLE-PASTE-MIXER TENDER(bake. prod.) DPT:685
slurry-tank tender.
GED: 2 SVP: 2 EC: I 4 PA: H 4

Tends equipment to mix food paste ingredients preparatory to making macaroni and noodle products:
Weighs ingredients in batch quantities according to specifications. Dumps quantities of ingredients into blending tanks. Starts mechanical agitators in blending tanks to mix ingredients to form slurry or

paste. Opens valves upon completion of mixing cycle to transfer paste from slurry tank for further processing. Cleans equipment between production runs using cleansing solutions, cloths and brushes.

Candy Making and Related Occupations
8213-246 through 8213-314

8213-246 CANDY MAKER(confection.) DPT:362
GED: 3 SVP: 7 EC: I 5 PA: M

Mixes and cooks candy ingredients by following, modifying or formulating recipes to produce product of desired flavour, texture and colour:

Cooks ingredients at specified temperatures in open-fire or steam-jacketed kettles or in batch or continuous pressure cookers. Tends machine that casts candy in starch or rubber moulds. Spreads candy onto cooling and heating slabs. Kneads and machine-pulls candy. Spins or rolls candy into strips ready for cutting. Examines, feels and tastes product to evaluate colour, texture and flavour. Adds ingredients and modifies cooking and forming operations as needed.

May direct other workers. May be designated according to type of candy produced; for example,
Caramel-Candy Maker
Hard-Candy Maker
Toffee-Candy Maker

8213-250 CONFECTIONERY COOKER(confection.) DPT:682
GED: 3 SVP: 6 EC: I 6 PA: M 4

Controls open-fire or steam-jacketed kettles, or batch of continuous pressure cookers, to cook candy, gum, or other confectionery ingredients according to formula:

Weighs or measures ingredients such as sugar, corn syrup, butter and gum base, and adds them to cooking utensil. Starts agitators to mix ingredients. Turns valve to admit steam and sets pressure gauge and thermostat to cook ingredients at specified temperatures. Tests batch to determine consistency, and adjusts steam valve and heating element accordingly. Opens discharge valve and starts pump or tilts cooker or kettle to pour or dump confection into beaters or onto cooling belts or tables.

May verify percentage of sugar in syrup using refractometer or hydrometer. May partially cook batch in open kettle and pump it into pressure cooker. May beat or knead confection to attain specified consistency, as determined by colour and texture. May shovel fondant into remelt kettles and add measured amounts of flavouring and colouring. May be designated according to type of confectionery cooked or equipment used; for example,
Bonbon Warmer
Coconut Cooker
Crystal-Syrup Maker

8213-254 ENROBING-MACHINE OPERATOR(confection.) DPT:662
GED: 3 SVP: 6 EC: I 5 PA: L 4

Controls machines and equipment to enrobe (coat) confectionery products with chocolate or other coating:

Turns switches and valves on central control panel and pushes levers to start machine and conveyor that transfers candy or other products to devices which apply coating material, trim surplus, remove drippings, and cool enrobed products. Weighs products to ensure specified thickness of coating, and examines to determine conformity of hardness and gloss and uniformity of coating. Adjusts air blower, trimming rod, and flow rate of coating material, using hand tools, to correct product. Turns switches and valves to adjust steam and water flow in jacketed supply tank, conveyor belt speed, and temperature of cooling tunnel.

May produce hand-dipped effect on coated product by adjusting decorating devices on machine or by applying specially cut plastic sheet to tops of product. May clean and lubricate equipment. May be designated according to coating material; for example,
Chocolate-Machine Operator

8213-258 MOULDING-MACHINE OPERATOR(confection.) DPT:662
GED: 3 SVP: 5 EC: I 5 PA: L 4

Sets up and operates machine to mould soft candies such as gumdrops, orange slices, jellies, or centers for chocolates: Installs and tightens mould-printing board in machine, using thumbscrews or inserting wedges. Observes thermometer and turns steam valve to maintain specified temperature in candy-melting hopper. Opens valve and starts pump to fill hopper of depositing unit with fluid candy. Starts machine and turns handwheels to synchronize flow of candy from depositing spouts with speed of mould board as it passes beneath spouts for filling. Weighs formed candy for adherence to specifications and regulates flow from spouts accordingly.

May make minor adjustments to moulding machine, such as tightening belts and adjusting setscrews, using small hand tools.

8213-262 PANMAN(confection.) DPT:682
candy polisher; pan operator.
GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates machines to coat items, such as candy, nuts, and chewing gum tablets, with syrup and wax colouring matter, or other material to provide specified finish or polish:

Dumps candy or other product into pan mixer and starts pan revolving. Pours specified quantity of syrup over whirling product, and passes hands through batch to spread syrup uniformly. Turns steam valve and observes thermometer to regulate pan temperature according to specification. Examines and feels product to determine adequacy of coating, and applies successive charges of syrup until specified coating thickness is attained.

May add specified flavouring and colouring ingredients in final coating or apply emulsified or dry ingredients such as gum solution, corn starch and sugar to product. May transfer contents to polishing pans and add specified ingredients to polish coating. May set temperature controls and start blower to dry syrup. May be designated according to product coated or polished; for example,

Almond-Pan Finisher
Chocolate-Peanut Panman
Gumdrop Coater

8213-266 SPINNER(confection.) DPT:682
GED: 2 SVP: 4 EC: I PA: M 4 7

Operates machine that rolls or spins hot candy into rope-like strip ready for cutting:

Kneads hot candy into cylindrical shape on steam-jacketed pouring plate with gloved hands. Turns water and steam valves to regulate temperature of plate. Actuates heating unit of batch roller and starts machine. Lifts candy from pouring plate and feeds it between rolls of batch roller. Pushes lever to reverse action of rollers to stretch and compact candy to required size strip.

May feed strip, discharged from batch roller, into cutting machine. May make specified types of hard candy, performing a combination of duties, such as flavouring or colouring batch; spreading soft-center mixture, such as peanut butter, jam, or paste, onto partially set candy; pulling candy prior to rolling and spinning; or applying varicoloured candy strips along cylinder to achieve mottled effect. May control battery of machines that roll or spin candy, pump soft centers into candy, size rope candy, cut candy to specified lengths, and pass it through cooling conveyors for wrapping and packing. May be designated according to type of candy prepared; for example,
Coconut-Jelly Roller
Hard-Candy Spinner

8213-270 CANDY-MAKING-MACHINE TENDER DPT:685
(confection.)
GED: 3 SVP: 4 EC: I 5 6 PA: H 4 7

Tends candy-making machines and equipment that heat, mix and form candy products:

Weighs, measures and dumps specified quantities of ingredients such as chocolate liquor, milk and sugar into cooker and mixer. Turns valves and sets thermostat and timing controls to heat mixer according to specifications. Starts mixer and observes meters and gauges to regulate heating and mixing. Examines mixture to ensure proper colour and consistency. Opens discharge valve, starts pumps or tilts cooker or kettle to pour cooked candy onto tables or into beaters. Washes equipment after each batch.

May spread product onto cooling and warming slabs to form soft candy. May cut candy by hand or with powered knife. May form hard candies by hand or using pulling or spinning machines. May cast candy in starch or rubber moulds or tend extruding machine. May be designated according to type of machine tended or kind of candy produced; for example,
Caramel-Candy-Machine Tender
Nougat-Candy-Machine Tender

8213-274 CHOCOLATE-MOULDER, MACHINE(confection.) DPT:685
GED: 3 SVP: 4 EC: I 5 6 PA: L 4 7

Tends machine and equipment that deposits tempered chocolate in moulds to form bars, blocks and assorted figures:
Transfers fluid chocolate from tempering equipment to depositor of moulding machine by turning valves. Maintains specified temperature of chocolate in depositor by turning valves that regulate flow of circulating water in jacket of depositor. Adjusts piston stroke of depositor that forces measured amounts of chocolate into moulds on moving conveyor, using hand tools, and sets speed of conveyor by turning handwheel. Observes thermometer and turns thermostatic controls and valves to regulate cooling-tunnel temperature. Starts depositor machine and weighs filled moulds to ensure compliance with weight specifications. Observes action of machine and conveyor to prevent blockages of moulds along conveyor.
May tend equipment to grind and mix nuts with other ingredients, and deposit and mould ingredients with chocolate to produce bars, blocks, chips, kisses and sprigs. May record production data.

8213-278 CUTTING-MACHINE TENDER(confection.) DPT:685
candy cutter.
GED: 2 SVP: 5 EC: I PA: M 4

Tends machine that cuts candy, such as caramel, nougat, or fudge, in pieces or strips of specified size:
Cuts slab of candy into sections, using knife. Selects cutting disks, to mount on shaft according to specified width of cut, and installs cutting disks in machine. Places candy on conveyor that carries it under rotating disks for cutting into strips. Repositions cut strips on conveyor or feeds strips against knife so that slicing occurs at right angle to first cut, forming square or oblong pieces of candy suitable for shipment, or further processing. Weighs random samples to ensure conformity of product with size and weight specifications. Dusts candy with flour or starch to prevent sticking.
May tend machine equipped with two cutting heads and device that changes feed angle so that candy is automatically sliced into strips and cut into pieces of specified size and shape. May be designated according to type of candy processed.

8213-282 CANDY PULLER AND ROLLER(confection.) DPT:685
GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Tends machine and equipment to shape and condition soft candy, performing any combination of the following duties:
Kneads and pulls batch of candy. Adds specified amount of colouring and flavouring agents and continues kneading to distribute agents uniformly and to harden candy for machine pulling. Hangs kneaded ribbon of candy on hooks of pulling machine, and starts machine that pulls candy to harden it sufficiently for spinning and cutting. Dusts surface of work table with powdered sugar to prevent adherence of candy. Kneads slab of candy into roll and cuts roll into slices of specified size. Shapes centers by hand preparatory to coating. Applies coloured candy stripes manually along outer surface of candy- roll. Places candy on heated canvas belt. Rolls candy into rope like shape. Starts machine and feeds candy into intake tube for cutting to specified length, for rolling into specified shape and for cooling preparatory to being wrapped and packaged.
May be designated according to specific task or machine tended; for example,
Ball-Machine Tender
Stick Roller
Toffee Puller

8213-286 CHOCOLATE TEMPERER(confection.) DPT:685
chocolate conditioner.
GED: 2 SVP: 4 EC: I PA: M 4

Tends water-jacketed kettles or automatic equipment, that tempers chocolate preparatory to moulding or coating confectionery products:
Transports boxes of chocolate to work area, using dolly. Dumps block chocolate into kettles. Observes thermometer and turns valves to admit steam or water into kettle jacket to heat or cool chocolate as specified by temperature-time chart. Starts agitators and scrapers in tank to mix chocolate. Pumps chocolate from melting kettle through water-cooled column of automatic tempering equipment. Sets thermometer dial to regulate temperature of chocolate in column to achieve specified temper.
May pour chocolate into enrobing-machine hopper, using pail, and adjust thermostat to regulate temperature of hopper contents.

8213-290 DIPPER, HAND(confection.) DPT:684
candy dipper, hand; icing dipper.
GED: 2 SVP: 3 EC: I PA: S 4 7

Dips candy centers, fruit, or nuts into coatings to coat, decorate and identify product:
Scoops liquid coating material onto slab of heated dipping table and kneads material, such as chocolate, fondant, or icing to attain specified consistency. Drops candy item into mass and swirls candy about until thoroughly coated, using fingers or fork. Removes candy and marks identifying design or symbol on top, using fingers or fork to identify type of center or brand.
May mix coating ingredients and dip candy into vat containing coating material, regulating vat temperature to maintain specified consistency. May mark top surface of coated candies with standardized identifying or decorative strokes to simulate hand-dipped appearance, using container equipped with specially shaped nozzle. May pour liquid chocolate into moulds to shape products. May be designated according to type of center dipped or coating used; for example,
Bonbon Dipper
Chocolate Decorator
Cream Dipper

8213-294 SANDING-MACHINE TENDER(confection.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: H 4 7

Tends equipment that applies coating of sugar to candy, such as gumdrops and orange slices:
Dumps sanding sugar into hopper of rotating cylinder. Turns steam valve and starts conveyor that carries candy through steam bath for heating and moistening, and into cylinder for application of sugar coating. Examines sugared candy as it emerges on conveyor and adjusts flow of steam and sugar to correct imperfections in coating. Removes malformed or improperly coated candies.

8213-298 CANDY-CENTER MAKER(confection.) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: M 4 7

Tends machine that extrudes soft candy, such as fondant, to form centers of specified dimensions for candies, bars, chocolates and drops:
Inserts and secures appropriate die plate in machine, or adjusts extrusion bars to specified size of candy pieces, using hand tools. Examines and tests colour and consistency of candy mixture. Dumps candy mixture into machine hopper. Adjusts valve to regulate flow of steam into hopper jacket to maintain specified temperature of candy mixture. Moves lever and releases hopper gate to start machine that automatically feeds candy through openings in die plate or through extrusion bars and cuts off and deposits pieces on conveyor. Selects and weighs random pieces to ensure conformity with specifications. Adjusts wire or knife that cuts extruded candy to specifications, using hand tools.
May turn handwheel to synchronize speed of center machine with enrobing machine to coat cream centers with chocolate. May be designated according to product extruded; for example,
Chocolate-Bud-Machine Attendant
Fondant-Machine Tender

8213-302 SUCKER-MACHINE TENDER(confection.) DPT: 685
GED: 2 SVP: 3 EC: 1 PA: M 4

Tends machine that automatically forms lollipops of specified size and shape on ends of wooden sticks:

Turns steam valve to heat candy hopper and rollers of candy-spinning unit. Fills receptacle of machine with sucker sticks and pours liquified candy into hopper. Monitors and adjusts machine to prevent jamming. May roll, knead, and spin candy into strips by hand and feed strips into machine.

8213-306 COCOA-POWDER MIXER(confection.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: H 2 4

Tends machine that mixes dry ingredients to make cocoa blends and dairy-powder mixes:

Weights out amounts of ingredients, such as sugar, powdered milk and cocoa, according to formula, and drops ingredients into mixing machine. Starts machine that mixes ingredients for prescribed time. Opens machine valve and starts conveyor to transfer mixed batch to holding tanks prior to further processing. Collects and sends sample of mixture for laboratory analysis. Cleans equipment and work area, using water hose, brushes and cloths.

May add ingredients and remix batch to comply with laboratory instructions. May be designated according to product mixed; for example,

Cocoa Blender

Dairy-Powder-Mixer Operator

8213-310 CONCHE-MACHINE TENDER(confection.) DPT:685
GED: 2 SVP: 2 EC: 1 3 5 PA: L 2

Tends conche machine equipped with agitators or rollers that agitate refined chocolate to improve its colour, flavour and texture for confectionery making:

Pumps specified amounts of chocolate mixture from stationary tanks or drums into conche machine. Pushes lever to start and regulate speed of agitators or rollers, according to specified time cycle. Observes mixture to evaluate conformity with standard and sends samples to laboratory for testing. Empties conche machines by pumping, shovelling and scraping liquid chocolate into trays. Places trays on trolley and pushes trolley into cold room to solidify chocolate.

May meter out and add to chocolate mixture, specified amounts of ingredients such as cocoa butter, lecithin and flavourings. May clean conches, pumps and equipment after use by scraping and washing, using spatula, pail and sponge.

8213-314 CANDY-MAKER HELPER(confection.) DPT:686
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Assists workers to make variety of cooked candies, performing any combination of the following duties:

Dusts pans, trays or slabs with powdered sugar, or greases with shortening, or covers with waxpaper to prevent sticking. Spreads candy to specified thickness, using spatula or roller. Positions trays under machine to receive moulded candy. Stacks filled trays, and transports trays to drying area, using hand truck or fork-lift truck. Selects assorted centers from boxes, trays, or base of chute and places them in rows on conveyor belt to conform with individual box or layer arrangement. Removes malformed or broken centers and places them in salvage container. Dumps trays of candy into hopper of machine that shakes starch from candy. Cuts candy into sections using hand knife or sets and presses cutter frames into candy to slice individual sections. Roughens surface with scraper to simulate homemade candy, or sprinkles chopped nuts or fruit over candy to decorate it, or cuts and spreads bar candy. See also definition for term title, 02-160 HELPER (any ind.).

May be assigned to specific duty and be designated accordingly; for example,

Bar-Candy Maker

Rougher

Starch Dumper

Miscellaneous Baking and Confectionery

Making And Related Occupations

8213-334 through 8213-386

8213-334 GUM-SHEETING AND SCORING-MACHINE OPERATOR (confection.) DPT:661
GED: 3 SVP: 5 EC: 1 7 PA: L 4 5 6 7

Operates one or more machines that roll chewing gum into sheets, and cut and score sheets to specified pattern:

Turns handwheels to adjust rollers, knives and scoring blades on machine to regulate size and thickness of sheet gum, and depth of scoring to specifications, using ruler or gauge. Starts machine and movement of gum through cooling tunnel into hopper of machine. Measures width, length, thickness and weight of scored sheets to ensure conformity with specifications, using devices such as gauge, micrometer, over/under shadowgraph and scale. Examines sheets for defective scoring and for amount of sugar coating. Directs other workers engaged in controlling flow of gum to machine, loading gum trays, unloading scoring machine and filling coater hopper with sugar.

8213-338 CONFECTION-SYRUP MAKER(confection.; food & bev., n.e.c.) DPT:682
syrup blender.
GED: 3 SVP: 4 EC: 1 PA: M 4

Tends equipment such as mixing kettles, pumps, pressure cooker and homogenizer to make chocolate and other flavoured syrups, according to formulas:

Weights and dumps ingredients such as cocoa powder, gelatin, pectin, water and sugar into mixing kettle. Admits metered amounts of invert sugar, syrup, cocoa butter and chocolate. Pushes buttons to start agitator to blend ingredients for specified time. Starts pump to transfer mixture to pressure cooker. Sets pressure cooker gauges and thermostat and adjusts steam valve to maintain required cooking conditions for specified time. Examines consistency of batch, using wooden paddle, and pumps mixture through homogenizer to ensure uniform consistency. Collects samples for laboratory analysis. Pumps finished product to holding tanks or drums.

May obtain daily requirements of flavouring extract from laboratory or storage area. May record number and kind of batches of syrup produced. May tend equipment to prepare flavouring mixtures used for food products such as breakfast cereal or ice-cream, and be designated accordingly; for example,

Cereal-Flavouring Maker(food & bev., n.e.c.)

Flavour Man(confection.)

8213-342 NUT-MIXTURE MAKER(confection.) DPT:482
nut-mixer operator.
GED: 3 SVP: 3 EC: 1 5 6 PA: L 4 7

Controls automatic feeders, vibrators and conveyors that mix and transfer prescribed types, quantities, and sizes of edible nuts for processing or packaging:

Presses button that activates automatic vibrators and feeders to release and mix prescribed kinds, quantities and sizes of nuts from storage tanks onto conveyor. Measures rate of flow of nuts from each feeder, using volumetric cup and stopwatch, and compares results against specifications. Weighs sample of nuts taken from each feeder, using balance scale. Adjusts controls on feeders to attain required rate of flow of each kind of nuts onto conveyor so mixture meets quantity, quality and cost requirements. Starts conveyors to transfer mixed nuts to processing or packaging areas. Sends sample nut mixtures to laboratory for analysis and record purposes.

8213-346 NUT ROASTER(confection.) DPT:685
GED: 3 SVP: 3 EC: 1 PA: H 4 7

Tends equipment that roasts, blanches, and cleans shelled nuts:

Sets temperature and time controls on oven for roasting process. Dumps nuts into rotary drum in oven, or fills trays by hand and places them in oven. Removes sample of nuts from oven, using spoon, compares nuts with colour standard, and adjusts time and temperature controls of oven to ensure roasting specifications are met. Removes trays of roasted nuts from oven for further processing, or pulls lever to empty roasted nuts from oven into bin. Smooths out nuts in bin, using rake. Pushes bin over forced draft air vent to cool nuts. Tilts bin by hand or uses hoist to dump cooled nuts into hopper of machine that removes skins, sprouts, stones, shell particles, and dirt, and starts machine.

May immerse nuts in hot oil bath to roast them. May salt nuts. May pack nuts into bags or sacks. May be designated according to kind of nuts roasted or method used; for example,

Almond Roaster
Dry Roaster

8213-350 CHICLE-CENTRIFUGE OPERATOR (confection.) DPT:682
GED: 3 SVP: 3 EC: I 3 6 PA: M 4

Operates heated centrifuge machine to melt and filter chicle used in making chewing gum:
Loads gum base into steam-jacketed cooker of centrifuge. Reads gauges and turns air pressure and steam valves to regulate temperature and pressure in cooker to control melting of ingredients. Starts pumps that force melted chicle through strainers and into centrifuge that separates insoluble material and transfers chicle into holding tank. Washes strainers and centrifuge cylinders, using solvent, scrapers and brushes.

8213-354 COOK, CORN CHIPS(food & bev., n.e.c) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4 7

Tends machine that extrudes and fries corn dough in hot fat to make corn chips:
Lifts roll of corn dough from table and places it in hopper of shaping machine. Starts machine that passes dough between flattening rollers, cuts and conveys dough through fry-tank to make corn chips. Inspects colour, texture and size of product, and regulates cooking temperature and conveyor speed as required.
May knead corn-meal dough into loaves. May tend oven to bake dough to make tortillas. May fill sprinkling device to shake salt over chips emerging from fry tank.

8213-358 CORN COOKER(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: H 4

Tends equipment that cooks and softens corn, preparatory to grinding into corn-meal dough used for frying or baking products such as, corn chips and tortillas:
Dumps prescribed quantities of ingredients, such as shelled corn, water and lime into cooking vat. Turns valve to admit steam into jacket of vat, adjusts thermostatic controls of cooker and starts agitator to stir and cook ingredients for specified time. Tests softness of cooked corn by squeezing kernels between fingers. Drains corn from cooking unit into wheeled cooling-and-soaking tank.

8213-362 CORN-DOUGH-MACHINE TENDER(bake. prod.; food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 3 4 5 6 PA: L 4 7

Tends semi-automatic machine that hulls, crushes and rolls cooked corn into dough for use in making breakfast cereals and other food products:
Starts machine and moves controls to adjust grinder or crusher and clearance of spreader rollers, to produce corn-dough of specified texture and thickness as indicated by hand gauge. Fingers handful of dough to verify consistency and fineness of grind. Adjusts controls of conveyor, carrying cooked corn from automatic cookers to crusher, to regulate supply of dough to meet needs of other production workers. Cleans equipment, using steam hose and brushes.
May be designated according to type of product; for example, Flake Maker

8213-366 POPCORN-CANDY MAKER(confection.) DPT:685
popcorn coater.
GED: 2 SVP: 3 EC: I 3 5 6 PA: L 4

Tends equipment to melt ingredients and spray popcorn to make popcorn candy:
Weighs, measures and dumps ingredients such as cheese, corn syrup, or caramel, butter, nuts, salt and water, according to formula, in open-fire cooker or steam-jacketed kettle. Melts and stirs ingredients in kettle. Dumps popped corn into mixing-machine bowl or other container. Pours syrup, caramel or mixed ingredients over popcorn. Starts agitator to spread coating, or starts drum and pump that sprays coating on popcorn. Pulls lever to dump popcorn candy into drying tray.
May tend moulding press to form candy novelties, such as balls or disks. May spray coatings on popcorn, using manually operated spray equipment.

8213-370 BATCH-MIXER, CHEWING GUM(confection.) DPT:685

GED: 2 SVP: 2 EC: I PA: H 4

Tends machine that mixes ingredients, such as powdered sugar, corn syrup, and flavouring with gum to manufacture chewing gum:
Places spout of vibrating hopper containing powdered sugar in top of mixing machine and starts vibrator and mixer. Places container on scale under spout of centrifuge machine or storage tank and opens valve to allow specified amount of gum base to fill container. Positions container over mixer and opens discharge valve to allow gum base to flow into mixer. Dumps gum requiring reprocessing into mixer, opens valve to dispense specified quantity of corn syrup and pours pre-weighed quantities of flavouring concentrate and glycerine into mixture. Starts machine to blend ingredients for prescribed time.

8213-374 CHEWING-GUM-MACHINE TENDER(confection.) DPT:685

GED: 2 SVP: 2 EC: I 5 6 PA: M 4

Tends machines that apply sugar coating, score and break sticks of chewing gum, performing any combination of the following duties:
Pours powdered sugar into hopper of machine that automatically coats gum to add flavour and prevent adhesion of sheets of chewing gum to rollers of scoring mechanism. Removes scored sheets of gum from trays, breaks sheets along scores to form strips and feeds strips into machine hopper for scoring into stick lengths. Sprinkles sugar by hand on poorly coated strips of gum. Inspects gum for imperfections and removes defective strips for reprocessing. Stacks scored strips in trays and takes trays to wrapping machine. Makes minor adjustments such as resetting machine guides or clearing blockages and replenishes trays of gum.
May tend machines that wrap and package sticks of gum.

8213-378 POPCORN MAKER(confection.) DPT:685
corn popper.

GED: 2 SVP: 2 EC: I 3 5 6 PA: L 4

Tends one or more ovens to pop corn:
Lights gas-fired ovens and starts drum-shaped perforated oven to rotate. Dumps measured amount of corn into rotating drum. Places container at discharge outlet to receive popcorn or starts conveyor to carry corn through screen to remove unpopped kernels. Moves lever to reverse rotation of drum and dump unpopped kernels into container beneath oven.
May tend stationary oven and push lever to release measured amount of oil into unpopped corn before heating oven. May mix syrup and popcorn to make popcorn candy.

8213-382 CHICLE-GRINDER FEEDER(confection.) DPT:686
gum batch maker.

GED: 2 SVP: 2 EC: I 5 7 PA: M 3 4

Weighs and feeds prescribed quantities of chicle and other basic ingredients into grinding machine, preparatory to making chewing gum:
Weighs quantities of chicle and other basic chewing gum ingredients in specified proportions to prepare batches of gum. Loads blocks of chicle and other ingredients onto conveyor of grinding machine, using electric hoist or lift truck. Starts machine and places empty containers under discharge spout to receive ground materials. Shovels material into barrels on platform scale to verify specified batch weight. Cleans work area and equipment, using brushes, scrapers and solvents.

8213-386 GUM-SUPPLY MAN(confection.) DPT:686
gum puller.

GED: 2 SVP: 2 EC: I 6 7 PA: M 3 4

Removes batch of chewing gum from mixer and feeds gum into machine that rolls, cools and scores gum sheets:
Positions cart under outlet of mixer. Sprinkles pulverized sugar by hand over interior surfaces of cart to prevent gum from sticking. Presses switch to tilt mixer and opens unloading door. Pulls quantity of gum from mixer, cuts it with knife, and drops gum into cart. Pushes cart into position over hopper of scoring machine, and pulls lever to lock wheels in position. Tilts cart or actuates automatic device to dump gum into hopper. Scrapes residual gum from sides and blades of mixer

between flavour and product changes. Cleans work area, using scouring, cleansing solutions, cloths, mops and squeegee.

8215-SLAUGHTERING AND MEAT CUTTING, CANNING, CURING AND PACKING OCCUPATIONS

This unit group includes occupations concerned with slaughtering animals and poultry; preparing, preserving and packing meats; and processing edible and inedible by-products for food or other uses. Activities include: skinning, cutting, boning, cooking, curing, smoking, dehydrating, canning and freezing meat products.

Slaughtering and Meat Cutting Occupations 8215-110 through 8215-178

8215-110 BUTCHER, ALL-ROUND(slaught. & meat pack.)
DPT:381
slaughterer.
GED: 3 SVP: 6 EC: I 4 6 7 PA: H 3 4 7

Slaughters animals in small meat packing establishment, using tools, such as saws, cleaver and knives to perform any combination of the following duties:
Stuns animals prior to slaughtering, using mechanical device. Shackles hind legs of stunned animals to raise them for slaughtering, skinning or dressing. Severs jugular vein of animals to drain blood and facilitate dressing and preservation of meat. Trims and removes head meat or severs animal heads. Skins cattle and shaves hog carcasses. Slits open, eviscerates and trims out animal carcasses. Scribes, saws or splits carcasses to smaller portions to facilitate handling. Trims, sorts and washes viscera to prepare and separate edible from inedible portions for further processing. Washes and shrouds dressed cattle carcasses to improve appearance and protect meat.
May trim, clean and salt hides in packs for curing. May cut, bone and prepare standard meat cuts; such as, chucks, hams, loins, plates, rounds and shanks for marketing. May prepare meats for smoking or make sausages and other meat products.

8215-114 MEAT CUTTER(ret. trade;slaught. & meat pack.)
DPT:684
butcher.
GED: 3 SVP: 5 EC: I 2 5 6 PA: M 4 7

Cuts, trims and prepares meat for marketing or cooking, performing any combination of the following duties:
Cuts and trims standard cuts of meat to shape and size for display or as ordered by customer, using hand tools and power equipment. Cuts fresh or frozen loins, ribs, rounds or other meat into individual portions, steak or chops for cooking, using hand saw. Trims excess fat and scrapes bone dust from portions. Cleans and cuts fish and poultry. Sets up and operates grinder, powered mixer and patty-forming machine to prepare meat and other ingredients to make meat patties. Weighs extruded patties for conformity to standards. Feeds folded pieces of boneless meat through roller-cutter of cubing machine to form steaks or cutlets. Spreads bread crumbs over cutlets. Packs products in lined containers or on trays.
May cut out bones from meat cuts. May wrap and weigh meat for customers and collect payment for sales. May be designated by duty performed; for example,
Meat-Patty Maker
Meat-Portion Cutter

8215-118 SLAUGHTERER, RITUAL(slaught. & meat pack.)
DPT:684
shohet.
GED: 3 SVP: 5 EC: I 3 4 6 7 PA: L 4 7

Slaughters cattle, calves and sheep, as prescribed by Jewish law, and examines and approves kosher meat for sale:
Selects knife (chalef) according to size of animal to be slaughtered. Sharpens knife, using whetstone or steel until edge is razor sharp, and washes it under stream of water. Cuts throat from ear to ear of animal

held by mechanical restrainer or other workers, using single cross and back stroke. Reaches into opened chest cavity and feels lungs and chest walls for adhesions. Inflates lungs at inspection table to determine soundness, using compressed air tube. Examines other exposed internal organs for growths, discoloration or other indications of disease. Marks inner side of carcass with knife point or marker and indelible ink to identify kosher meat.

8215-122 SKINNER, ANIMAL(slaught. & meat pack.)
DPT:684
hide puller.
GED: 2 SVP: 6 EC: I 3 4 5 6 7 PA: H 3 4 7

Skins animal carcasses performing any combination of the following duties, working as member of a team:
Slits skin on head of carcass and pulls and cuts connective tissue with knife to expose head and neck. Severs head, using knife and cleaver. Tags head and sets it aside for inspection. Slits remaining hide along mid-line from breast bone to crotch and around extremities. Removes hide by either of following methods. 1. Grasps hide and pulls and forces hand between hide and tissue covering carcass, and manipulates air-jet nozzle or knife to separate whole skins of small animals. Trims adhering meat or fat from hide. 2. Hoists carcass from floor and attaches tabs of hide to clamp of hydraulic hide-pulling machine. Monitors mechanical removal of hide and severs restraining tissue, using knife. Releases clamp and drops hide onto floor or down chute. Breaks and severs legs at knee joint and salvages other parts. Severs and exposes gullet and wind-pipe of small stock and ties gullet to prevent leakage. Slits open womb of cattle and removes and skins slunk (unborn calf). Skins hog carcasses, using draw-knife.
May be designated by kind or section of carcass skinned; for example,
Backer
Brisket Skinner
Calf Skinner
Sider

8215-126 BONER, MEAT(slaught. & meat pack.)
DPT:684
ribber.
GED: 2 SVP: 5 EC: I 2 4 6 PA: M 4 7

Cuts bones from standard cuts of meat to prepare them for packing and marketing:
Lifts quarters of beef or meat cuts from supply rail or truck to boning table, using meat hook. Inserts knife in meat and cuts to separate meat, fat or tissue from around bone. Pulls and twists bones loose from meat. Cuts and trims meat cuts; such as, butts, hams, flanks and shoulders to shape them or remove fat, blood clots, bruises and undesirable matter. Trims residual meat from bones, using chisel and hand or powered knives. Tosses boned meat, trimmings and bones to specified table, conveyor, bucket or truck for further processing.
May roll and tie boned-meat cuts to make roasts. May be designated by type of animal, or according to cut of meat boned; for example,
Beef Boner
Blade Boner
Butt Boner
Chuck Boner
Ham Boner
Lamb Boner
Pork Boner

8215-130 EVISCERATOR, ANIMAL(slaught. & meat pack.)
DPT:684
gutter.
GED: 3 SVP: 4 EC: I 3 4 6 7 PA: M 3 4 7

Eviscerates cattle, calf, sheep and hog carcasses, working as member of a team and performing any combination of the following duties:
Slits open abdominal cavity of carcass, using knife. Reaches inside and cuts membranes holding intestines. Cuts bung from intestines, and ties intestines and bladder to prevent leakage of contents. Pulls intestines from carcass, trims off caul fat and dumps into separate containers for further processing. Separates liver and heart from stomach to present carcass and viscera for inspection. Removes beef stomach for tripe processing. Cuts through fat to expose and remove kidneys. Cuts out organs or glands; such as, sweetbreads, liver, heart and spleen and places them on conveyor or in containers. Cuts off tail and excess fat from beef carcass. Inserts spiral rod into gullet to sever gullet and windpipe from other neck tissues and ties gullet, or cuts out gullet, using knife. Cuts across bronchi to open, separate and trim lungs.

Washes lungs in cold water trough and squeezes out blood. Inserts knife under rib cage of hog carcass and cuts out spare ribs. Pulls leaf fat free at brisket end with both hands. Cuts off bruises, blemishes and ragged tissue to improve appearance and preserve carcasses.

May patch leaks in intestines, using skewers. May wash carcass and viscera with hose. May be designated according to function performed or part of animal eviscerated; for example,

Belly Opener
Bung Dropper
Gut Sorter
Kidney Remover
Lung Opener
Lung Washer
Viscera Defatter
Wash-Rail Trimmer

8215-134 CARCASS SPLITTER(slaught. & meat pack.)

DPT:684

GED: 2 SVP: 4 EC: I 2 3 4 5 6 7 PA: H 3 4 7

Splits and cuts animal carcasses into sections, using saws, cleavers and knives, to facilitate handling:

Splits carcass into halves along scribed line from butt to neck of back bone, using hand or power saw and cleaver, working from adjustable platform. Saws or cleaves carcass halves into parts, such as forequarters, hindquarters, shoulders and loins. Divides hog brisket symmetrically, using knife and rubber mallet. Weighs meat cuts and records weight on attached tags. Hangs cuts on conveyor hooks, or transports to truck and suspends on rack, or lays on pallets. Wraps cuts in heavy paper and cheese cloth.

May be designated by kind or part of animal cut, or by specific task performed; for example,

Breast Opener
Cattle Splitter
Primal-Carcass-Break-Up Man
Scriber

8215-138 ENZYME INJECTOR(slaught. & meat pack.)

DPT:684

meat tenderizer.

GED: 3 SVP: 3 EC: I 3 4 6 PA: L 4 7

Injects live cattle with papaya enzyme to tenderize dressed beef:

Drives cattle from storage pens into scale room, using electric prod or canvas slapper. Adjusts weights on beam scale to determine weight of each animal. Consults chart to learn quantity of enzyme to be injected, according to weight and grade of each animal. Drives animal from scale room into restrainer and places harness around head of animal. Turns crank to draw harness upwards, raising and exposing animal's neck. Allows sufficient enzyme to flow from storage bottle into burette. Locates animal's jugular vein, inserts needle, and lets enzyme flow from burette through needle into animal tissues. Withdraws needle, releases and drives animals back to storage pens. Records lot number, grade, weight of animals and amounts of enzyme used. Mixes cleaning solution of hyperchlorite and hot water, disassembles equipment and cleans parts, using brushes. Rinses parts with clear water and reassembles equipment.

May inject dressed meat cuts with enzyme, using machine equipped with multiple-needle device.

8215-142 STICKER, ANIMAL(slaught. & meat pack.)

DPT:684

GED: 2 SVP: 4 EC: I 4 6 7 PA: M 3 4 7

Severs jugular vein of stunned, suspended or shackled animals with sticking knife to prepare them for butchering:

Steadies neck of animal suspended from overhead rail, or shackled on table, by holding head or front leg with one hand. Thrusts knife into center of throat and draws blade upward or downward to sever jugular vein. Hangs bucket on hook placed in slit in throat to receive blood. Removes hook and bucket when bleeding has stopped. Places identification tag on carcass and on bucket, covers bucket and places on conveyor for further processing after carcass has been certified by inspector. Cleans floor in sticking area, using hot water, hose, broom and rubber scraper.

May shackle and suspend animals before sticking. May sever head and remove skin with knife after blood has drained. May be designated according to animal processed; for example,

Calf Sticker

Cattle Sticker

Hog Sticker

Sheep Sticker

8215-146 COOLER MAN(slaught. & meat pack.) DPT:587

GED: 2 SVP: 3 EC: I 2 4 6 PA: H 4 7

Prepares, stores and transports dressed meat for further processing or shipment, performing any combination of the following duties:

Examines carcasses in cooler room for colour, freshness and proper chilling to determine condition prior to cutting. Weighs carcasses on scale. Records information, such as condition, weight and date on production sheet and tags. Prints grade and brand on meat, using metal stamp, electric or hand iron and ink, and attaches date tags. Quarters carcasses, using knife and saw, and trims excess fat. Segregates carcasses and cuts by grade, in cooler. Pushes truck filled with glands, tongues, tails, edible organs and other meats into cooler, and places meat in pans or on racks. Pushes carcasses or quarters along overhead rail to cooler or between departments. Transports meat from shipping platform into delivery truck. Places trolleys on rails and cleans and greases rails. Washes floor and containers with hose, and shovels fresh sawdust onto floor.

May shroud or remove shrouds from carcasses. May pack tongues, tails, kidneys or livers in containers for shipping. May be designated by work place or duty performed; for example,

Beef-Cooler Man
Fancy-Meat Cooler Man
Hog-Cooler Man
Warm-Beef Receiver

8215-150 HEAD TRIMMER(slaught. & meat pack.) DPT:684
head boner.

GED: 2 SVP: 3 EC: I 4 6 PA: M 4 7

Removes meat, glands and organs from carcass heads for processing into meat, medicines or other products, performing any combination of the following duties:

Fixes head on holding hook or spike and trims skin and meat from jaw, jowls and skull with knife. Cuts fat from meat and drops into containers. Cuts out tongue and trims off fat, ragged edges, veins and bruises. Cuts and pulls hog snout from head, using knife and meat hook. Detaches jaw from skull, using jaw puller, bar or chisel. Splits skull with automatic splitter or cleaver. Removes brains, glands and other parts, placing them in separate trays. Removes horns from head, using power saw or shears.

May be known according to specific task performed; for example,

Snout Puller
Splitter, Head
Tongue Remover
Tongue Trimmer

8215-154 TRIMMER, MEAT(slaught. & meat pack.) DPT:684

GED: 2 SVP: 3 EC: I 2 4 6 PA: L 4 7

Trims fat, skin, tendons and ragged edges from meat cuts:

Trims meat cuts, such as loins, spareribs, butts, hams, rounds, sirloin, fillets and chops, and trims meat and fat from bones, using butcher knives, draw-knife or electric-powered knife. Places trimmings and bones in separate containers. Washes, scrapes or trims foreign material and blood from meat. Trims fatback from hog bellies and cuts bellies into specified shapes.

May feed bacon bellies through rolls to flatten to prescribed thickness. May be designated according to type or section of meat trimmed; for example,

Beef Trimmer
Belly Trimmer
Butt Trimmer
Lamb Trimmer
Loin Trimmer

8215-158 VISCERA MAN(slaught. & meat pack.) DPT:684
offal man.

GED: 2 SVP: 3 EC: I 3 4 6 7 PA: L 4

Separates animal viscera into food or other commercial products, performing any combination of following duties:

Cuts out glands and organs such as heart, sweetbreads, stomach, spleen and gall-bladder from adjoining tissues, and trims fat using knife or scissors. Pulls caul fat from paunch. Cuts and separates

membrane from gullet and wind-pipe, and inner lining from stomach. Pulls small from large intestines. Flushes and squeezes intestines and bladders to remove contents, using water hose. Grades, measures and sorts casings (intestines) according to condition and size, and cuts off damaged parts. Bleaches casings in saline solution. Salts and ties casings in bundles and packs in tierces (casks). Severs oxtails and trims loose tissue using knife and rotary brush. Brands tails and tongues with electric iron. Washes and places edible parts on spiked racks or in containers or trucks for further processing. May be designated according to specific duty performed, or by part of viscera processed; for example, Beef-Pluck Trimmer
Bladder Trimmer
Gland Man
Hog-Casing Puller

8215-160 STUNNER AND SHACKLER(slaught. & meat pack.) **DPT:684**
knocker.
GED: 2 SVP: 2 EC: I 4 6 7 PA: M 2 3 4 7

Stuns and shackles cattle, sheep, goats and hogs, using mechanical or electric shocking device:
Opens entry gate into knocking pen or chute. Moves levers to close squeezing mechanism that immobilizes animal. Stuns animal by striking it on forehead with controlled mechanical device, such as cartridge gun, pneumatic hammer, or with electrical-shocking device placed against head of animal. Dispatches animal to next work station by one of following methods: 1. Pulls lever to tilt floor of pen and slide cattle onto killing floor, or onto conveyors leading to shackling and sticking areas. 2. Shackles hind legs of stunned animals to revolving wheel of hoist that raises animal onto rail conveyor. 3. Hoists animal off floor for sticking and skinning, using chain hoist. May assist in driving animals into knocking pen, using canvas slapper or electric prod.

8215-162 DEFEATHERER(slaught. & meat pack.) **DPT:685**
GED: 2 SVP: 2 EC: I 5 6 PA: L 4 7

Tends machines that scald and defeather poultry carcasses suspended from moving conveyor:
Turns valves and handwheels to set water temperature in scalders as specified and to adjust position of defeathering rollers to size of birds. Ignites gas jets of singeing machine and adjusts flame to size of birds. Starts conveyor of poultry-slaughtering line. Examines defeathered poultry periodically to detect faulty removal of feathers and adjusts scalders, rollers and singeing flame as required. Flushes blood off floor into trough, using water hose. May direct workers engaged in removing pin-feathers and correct defective work.

8215-166 DEHAIRING-MACHINE TENDER(slaught. & meat pack.) **DPT:685**
GED: 2 SVP: 2 EC: I 3 4 6 7 PA: H 2 3 4

Tends equipment that removes hair from hog carcasses preparatory to dressing:
Turns hot water and steam valves to fill tank with scalding water and adds bleaching materials. Starts conveyor and releases shackled hog carcasses from conveyor into tank by tripping lever or using pry bar. Pushes soaked carcasses along length of scalding tank, using pole. Reads thermometer and periodically adjusts temperature of water in scalding tank. Hooks leg of carcass to conveyor passing through machine equipped with rotating beaters that remove hair and bristles. Opens exit door of machine and pulls carcass onto conveyor leading to dressing area. May be designated according to specific task performed; for example, Dropper, Dehairing Machine
Feed-In Man, Dehairing Machine
Scalder

8215-170 SINGEING-MACHINE TENDER(slaught. & meat pack.) **DPT:685**
GED: 2 SVP: 2 EC: I 3 4 6 7 PA: L 4

Tends singeing machine that burns hair off hog carcasses suspended from conveyor:
Turns valves to adjust length of gas flames of singeing machine to synchronize singeing operation with conveyor speed and prevent

burning carcass. Shuts off gas flames when conveyor stops to prevent damage to carcass.
May remove residual hair, using knife or portable torch. May singe and trim fat and hair tufts from oxtails and be designated accordingly,
Ox-Tail Singer

8215-174 SHAVER, HOGS(slaught. & meat pack.) **DPT:687**
scraper, hog hair.
GED: 2 SVP: 2 EC: I 3 4 5 6 PA: M 3 4

Removes hair and dirt from hog carcasses prior to further processing or marketing:
Shaves and scrapes suspended carcasses, using knife and scraper, to remove residual dirt and hair left in skinfolds or inaccessible areas by dehairing or singeing machines.
May remove eyelids, feet and bruised areas, using knife. May be designated according to specific part of carcass shaved; for example, Belly Shaver
Shoulder Shaver

8215-178 SHROUDER(slaught. & meat pack.) **DPT:687**
cloth pinner.
GED: 2 SVP: 2 EC: I 4 6 7 PA: M 4

Covers warm, dressed cattle carcasses and sides with hot muslin to improve appearance and protect outer surface during chilling, storage or shipment:
Trims ragged edges of flesh from carcass, using knife. Soaks muslin in hot, weak brine solution and then drapes cloth tightly and smoothly around suspended carcass, or side. Pins muslin at six-or eight-inch intervals, using metal skewers, stretching cloth tightly around meat, starting from flank side of hind shank down to brisket point. Pushes covered meat to conveyor leading to chill cooler, storage or shipping areas, or along rail onto scale and records weight.
May wash carcasses, using water spray. May roll shrouded carcass with hand roller to smooth meat surface. May wash and sterilize muslin cloths and metal skewers for re-use.

Meat Preparing, Preserving and Packing Occupations 8215-198 through 8215-310

8215-198 BUTCHER(cater. & lodg.) **DPT:381**
GED: 3 SVP: 7 EC: I 2 6 PA: H 4 7

Selects and prepares meats, fowl, fish and seafood, and portions cooked meats for serving in restaurants or catering establishments:
Chops or grinds meats, using grinder. Cuts, saws and chops meats, into pieces of different sizes, using saw, cleaver and knives. Shapes and ties roasts and fowl. Slices and trims steaks, chops, fowl, fish and shellfish for individual servings or sandwiches, according to established portion-control procedure. Inspects and weighs portions to ensure conformity with size and quality standards. Stores meats, fowl and seafood in refrigerators. Requisitions supplies. Assists in menu planning, scheduling and estimating or calculating food production costs.
May supervise other meat, fowl and fish cutters. May pickle meat and make sausages. May be designated according to kind of meat prepared; for example,
Butcher, Chicken and Fish

8215-202 SMOKER, MEAT(slaught. & meat pack.) **DPT:682**
smoke-house operator.
GED: 3 SVP: 5 EC: I 3 4 6 PA: H 3 4 7

Controls battery of smoke chambers in which meat cuts are smoked, cooked and cured:
Pushes racks or trolleys of meat, such as bacon, hams, picnic rolls, butt rolls, bologna, salami and wieners into smoke house. Shovels sawdust into hopper of smoker and ignites sawdust burner, or places wood logs against high-speed wheel in machine to create smoke by friction. Starts electric blower to admit air that blows smoke around meat. Observes gauges, turns steam valves and adjusts ventilators and dampers to control smoking, cooking and curing process. Inspects meat for colour, feels firmness and inserts thermometer into meat to determine progress of cooking and curing. Opens cold-water valve to spray and chill meat. Removes and pushes loaded racks or trolleys to chill-room. Weighs product after smoking to determine shrinkage loss.

Records kind and weight of meat smoked. Steam-cleans smoke chambers and heating coils and removes ashes. May turn valves to spray product with synthetic liquid-smoke solution prior to curing.

8215-206 PRE-COOKED-SAUSAGE MAKER(slaught. & meat pack.) DPT:682
GED: 3 SVP: 4 EC: I 3 4 5 PA: M 4

Sets up and controls equipment that extrudes, cooks and chills sausage links or patties:

Assembles couplings and piping to join extruding-machine compression cylinders with extruding head, and fits extruder cutter, using spanner. Fills cylinders with meat emulsion, using overhead bucket or shovel. Closes cylinder lids and actuates plunger that forces emulsion from cylinder into extruder. Turns valve to start steam flow to cooker unit, and presses switches of infra-red cooker, cooler fans and powered conveyor to produce links or patties. Weighs sample links or patties on scale and adjusts controls to produce standard product. Turns lever to transfer flow of meat emulsion from empty to full cylinders. Adjusts speed of conveyor to cooker to prevent burnt products.

May clean equipment and work area.

8215-210 SEWED-CASING MAKER(slaught. & meat pack.) DPT:684
GED: 2 SVP: 5 EC: I 4 6 7 PA: L 4 7

Prepares sewed animal casings for use in enclosing large sausages and specialty meat products, performing any combination of following duties:

Soaks casings (intestines) in brine cleaning and curing solution. Turns casings inside out to facilitate cleaning. Slides lengths of casings over shaped, wooden sticks and places sticks in drying room. Removes dried casings and slits lengthwise along groove of stick, using knife. Flattens casings and stitches edges of more than one casing together lengthwise, using sewing machine to form large uniform tubular casing. Inspects and grades sewed casings for soundness, size and uniformity. Cleans tables and equipment, using hot water, soap and brush. Washes and oils drying sticks, using washer and oil-spray gun. May be designated according to specific duty performed; for example, Casing Sewer
Casing Soaker and Turner
Casing Splitter

8215-214 POULTRY-SPECIALTY BUTCHER(slaught. & meat pack.) DPT:584
poultry boner; turkey-roll maker.
GED: 2 SVP: 4 EC: I 4 6 PA: L 3 4

Prepares poultry specialties such as turkey roasts and rolls, working as member of team and performing any combination of the following duties:

Thaws out frozen turkeys in water vat. Cuts off legs, wings, thighs and whole skin and bones out parts, using knife. Sews skin and breasts together, using needle and thread, placing loose meat in center to form roll. Shapes boneless carcass manually to form round roast and ties roast with twine to retain shape or tends automatic stuffer that forces boneless meat into plastic casing. Removes filled casing and seals with metal clip. Bones out cooked poultry, using knife and places loose meat in plastic bag and seals neck with knotted covered wire. Sprinkles dressed whole chickens with premixed, powdered spices for barbecuing. Places packaged poultry in specified quantities in containers for shipping and marks weight of contents on side of containers.

8215-218 MEAT CHOPPER(slaught. & meat pack.) DPT: 685
GED: 2 SVP: 4 EC: I 2 4 5 6 PA: H 3 4

Tends machines that chop and mix ground meat into emulsion for use in making such products as sausages and meat loaves:

Weights out different types of meat and ingredients such as powdered milk, cereal and pre-mixed seasonings, according to product specifications, using floor or table scales. Dumps ground meat and other ingredients into chopping machine, using truck-dumping mechanism, overhead hoist, conveyor or shovel. Starts chopper equipped with knives that cut and mix meat to consistency of paste, in rotating bowl. Observes thermometer and adds ice, using bucket or shovel, to maintain specified temperature of mix. Stops machine when emulsion is mixed to specified consistency, or after specified time has elapsed.

Pulls lever to lower center core of mixing bowl and discharge emulsion into bucket or truck. Scrapes emulsion from bowl. Washes out bowl of machine between batches, using water hose.

May push truck filled with emulsion, or pump emulsion from chopper to stuffing machine. May grind meat prior to chopping. May add and mix ingredients such as pickles, olives and pimentos to emulsion.

8215-222 PICKLING-SOLUTION INJECTOR(slaught. & meat pack.) DPT:685
artery pumper; stitch pumper; vein pumper.
GED: 2 SVP: 4 EC: I 4 PA: M 3 4 7

Injects meat cuts such as hams, bacon, picnic and butt rolls with pickle (curing) solution, using one of the following methods:

1. Adjusts height of injection needles and width of conveyor guides of automatic pickle-injecting machine to dimensions of meat cuts, using wrench. Turns valves to regulate flow and pressure of curing solution in pumping system. Starts injecting machine and conveyor. Lifts meat from hand truck and places meat on conveyor moving under injection needles which force specified amount of solution into meat. Weighs meat before and after injection to verify amount of solution injected.
2. Grasps meat cut and locates artery or vein, using forceps or knife. Inserts injection needle with attached tubing into artery. Clamps needle and open arteries to prevent loss of solution. Places meat on automatic calculating scale to observe weight changes during injection. Pumps solution into meat by pressing hand or foot lever until specified amount has been injected. Removes needle and clamps and places product into truck, or on conveyor.
3. Pushes needle of syringe filled with pickle solution into meat cut and presses lever to inject solution. Removes empty syringe and places product on truck or conveyor for further processing.

8215-226 SAUSAGE DRIER AND SMOKER(slaught. & meat pack.) DPT:687
dry-sausage-room man.
GED: 2 SVP: 4 EC: I 3 4 6 PA: H 2 4 7

Dries and smokes dry-sausage products such as pepperoni, pepperettes and salami:

Stores cages containing green (uncured) sausages in dry room, using hand truck, or places sausages hanging from sticks on drying racks. Washes grease or mould from hanging sausages, using hot water hose. Transfers specified types of dry-sausage to smoke house and lights fire to start smoking process. Inspects condition of sausages in smoke house periodically, and returns smoked products to dry room. Transfers batches of sausages through various sections of dry room as curing progresses. Transports cured products to loading docks for shipment, using hand truck. May stack cages of green sausages in dry room, using electric hand lift truck.

8215-230 VACUUM WRAPPER, MEAT(slaught. & meat pack.) DPT:684
GED: 2 SVP: 3 EC: I 4 6 PA: M 4

Wraps meat cuts such as cottage rolls, hams and roasts in shrinkable plastic bags:

Fits bag over tapered end of stuffing horn and forces meat cuts through tapered end into bag, or fits bag over product placed on turn table. Places opening of filled bag over vacuum-machine spindle and depresses pedal to exhaust air, and twists neck of bag. Places neck of closed bag in sealing device that attaches metal clip and cuts off excess wrapping. Places wrapped product on conveyor passing through heated tunnel or places product in basket and submerges it in hot water tank to tightly shrink wrapping around meat. Removes meat from tank or conveyor and places on truck. May pack product in containers. May form shipping containers, using stapling machine.

8215-234 CHUB-SAUSAGE-MACHINE TENDER(slaught. & meat pack.) DPT:685
GED: 2 SVP: 3 EC: I 4 PA: M 4

Tends machine that automatically stuffs and seals meat emulsion in plastic tubing to make chubs (stubby sausage products):

Installs roll of plastic film on machine. Threads film through rollers of machine to make tubing. Inserts load of metal clips in machine. Fills compression cylinder (stuffer) with meat emulsion, using overhead

bucket, pumps or shovel. Turns air valve and presses button to start machine which automatically stuffs tubing with emulsion and applies clips to form chubs of standard size. Observes operation of machine as it ejects chubs into water tank. Verifies weight of sausages on scales and adjusts mechanisms to ensure product meets specifications. Pushes trucks of sausages to cooking tanks.

8215-238 COOK, MEATS(slaught. & meat pack.) DPT:685
cook-kettle operator; cook-tank operator.
GED: 2 SVP: 3 EC: I 3 4 6 PA: M 3 4

Tends tank or kettle to cook meat products, performing any combination of following duties:

Turns valves to admit cooking oil or water into tank or kettle, and steam to heat vessel. Observes thermometer and turns valves to maintain specified temperature in vessel. Loads tank with mesh bags, wire cages, metal moulds and sealed cans containing uncooked meat such as hams, meat loaves, tongues, turkeys, blood sausage or sandwich spread. Lowers cage filled with uncooked products into tank, using overhead hoist. Lifts hams, blood sausage and other large cuts of meat from truck and suspends them from sticks (racks) or holding fixtures in tank. Places cooked meat loaves in basket and lowers them into tank of heated oil to impart crusty surface to loaves. Turns valves to drain tank or kettle. Removes cooked meats and places them on racks or in trucks. Weighs ingredients such as gelatin, olives, pickles and pimentos, adds them to cooked meats and mixes in kettle using paddle or powered mixer. Pours mixture into moulds to form jellied meat loaf. Removes bones or fat from cooked meat, such as turkey or tongue, using knife. Grinds meat, using grinding machine. Cleans and oils tanks and kettles, using hot water hose and spray gun. May bake, glaze or garnish hams and other meat products. May stuff meat loaves into artificial casings, using stuffing device.

8215-242 MEAT STUFFER(slaught. & meat pack.) DPT:685
meat moulder.
GED: 2 SVP: 3 EC: I 4 5 7 PA: M 4

Tends equipment that forces meat or meat emulsion into casings to make linked sausages, bologna and salami, or into moulds to make loaves, sandwich ham and jellied meats:

Selects casings or moulds and fits filling horn or mould on machine. Fills compression cylinder of machine with ground meat or emulsion, using shovel or dumping bucket from overhead hoist. Secures cylinder lid and turns valve to admit compressed air into cylinder. Slides end of casing over discharge nozzle and discharges meat into casing or mould by moving lever. Removes and closes filled casing with clip or by tying knot.

May set capacity of filler, or adjust control to regulate size of each unit of product. May feed lengths of filled casing into linking machine. May hand fill moulds or casings with meat. May tend machines that fill and seal tins filled with meat. May be designated according to method employed or product made; for example,
Bulk-Sausage-Stuffing-Machine Operator
Hand-Moulder, Meat
Jellied-Meat Packer
Sandwich-Ham Stuffer

8215-246 SAUSAGE MIXER(slaught. & meat pack.) DPT:685
meat mixer.
GED: 2 SVP: 3 EC: I 4 5 PA: M 3 4

Tends machine that mixes ground meat and condiments for making sausages and meat loaves:

Shovels or dumps ground meat into bowl of mixing machine and adds specified amounts of ingredients such as seasonings, cereal and water. Starts machine and observes thermometer, occasionally adding ice to bowl to lower temperature of mixture. Turns wheel to tilt mixing bowl and empty contents into truck or bucket. Scrapes and washes meat from bowl and mixing paddles, between batches, using metal scraper. May grind or chop meat prior to mixing.

8215-250 SAUSAGE-PEELING-MACHINE TENDER (slaught. & meat pack.) DPT:685
GED: 2 SVP: 3 EC: I 2 4' 6 PA: L 4 7

Tends machine that removes artificial casing from smoked meat products such as link sausages and wieners to produce skinless variety: Turns set screws to adjust skinning mechanism to size of sausage. Dumps meat product on bed of peeling machine. Starts machine by

pressing control button and feeds strand of sausage into machine. Observes peeled product emerging from skinner, and peels or scrapes off remaining fragments of casing, using knife. Discards damaged sausages into truck for reprocessing. Packs loose peeled sausage into containers for bulk shipment.

May tend collating machine that automatically places specified number of sausages onto conveyor-feeding-packaging machine. May tend machine that separates linked sausages preparatory to peeling. May tend machines that close, wash and shrink packages of sausages preparatory to shipment. May be designated according to type of machine tended or product skinned; for example,
Frank-Skinning-Machine Tender
Wiener-Peeler

8215-254 DRY-CURE MAN(slaught. & meat pack.) DPT:687
GED: 2 SVP: 3 EC: I 4 6 PA: M 3 4 7

Spreads mixture of dry materials to cure such meat products as special hams, butts, bacon and casings before smoking:

Pushes trucks of materials such as sugar, sodium nitrate and salt to curing room. Weighs out and mixes specified materials manually or using mixing machine. Places meat in boxes, tierces (casks) and vats and spreads mixture over each layer. Sweeps excess mixture from meat, using broom. Rearranges layers after specified interval to circulate air around meat.

May place concrete weights on boards over layers of special hams to flatten to traditional shape. May be designated according to product cured; for example,
Belly Packer
Casing Salter
Salt-Bellies Overhauler

8215-258 MEAT-ROLL TIER(slaught. & meat pack.) DPT:687
GED: 2 SVP: 3 EC: I 2 4 6 PA: L 4

Rolls and ties boneless cuts of meat by hand to form various kinds and sizes of roasts:

Rolls cut of meat on table into cylindrical shape. Forces large needle, threaded with twine, through various points of roll, or forms loops of twine around roast to hold roll in place. Draws twine tight, makes knot, and cuts twine, using knife or finger-ring cutter. Trims ragged edges of roast with knife.

May stuff roll of meat into elastic netting to form roast. May be designated according to type of roast produced; for example,
Butt-Roll Tier
Chuck-Roll Tier
Ham-Roll Tier

8215-262 PICKLE MAKER(slaught. & meat pack.) DPT:687
GED: 2 SVP: 3 EC: I 4 6 PA: H 2 4 7

Prepares pickling solution used for curing meats:

Moves drums and bags of ingredients to scales. Reads appropriate formula card, and weighs and dumps specified ingredients, such as salt, sugar, and chemical pickling compounds into mixing vat, using shovel or bucket. Turns valve to admit water or brine into vat and stirs contents, using paddle, agitator or air jet. Tests density of solution, using hydrometer. Tests concentration of nitrate in solution by titration, using standard solution and watching visible changes in pickle. Starts pump or turns valve to move solution to curing vats or pickle-pumping machines. Turns steam or cold-brine valve to heat or chill solution and verifies temperature, using thermometer. Cleans mixing vats, pipe lines, holding tanks, using steam hose, cleaning solution and brooms.

May observe colour of pickled meat in vats to determine degree of cure obtained.

8215-266 PICKLER, MEAT(slaught. & meat pack.) DPT:687
GED: 2 SVP: 3 EC: I 4 6 PA: H 3 4

Loads or packs meat cuts into pickling vats or barrels for curing:

Lays green (uncured) product in vats or barrels, using meat hook. Turns valves to admit curing solution or pours solution to cover meat. Places lid on containers to keep meat submerged and protected. Sticks trier (wooden skewer) into meat and determines extent of curing by smelling. Rolls barrel or rearranges meat manually (overhauling) in curing solution to ensure maximum saturation. Opens valve or pulls bung to drain vat or barrel. Removes cured meat for further processing, or adds salt to barrels to maintain pickle strength and fastens covers on barrels of cured product for shipping. Cleans vats or

barrels with water and steam hoses. Weighs and stencils barrels and rolls barrels to shipping dock.
May dump frozen meat into water tank for defrosting prior to curing.
May sprinkle dry-cure powder over meat cuts for curing.

8215-270 PACKAGER, POULTRY(slaught. & meat pack.)

DPT:587

GED: 2 SVP: 2 EC: I 5 6 PA: M 3 4

Packages dressed whole poultry, individually or in bulk, or cuts up and packages parts, performing any combination of following duties:
Severs neck and trims hocks to dress fowl, using power shears or knife. Drops neck and small bag containing giblets (liver, heart and gizzard) into carcass and presses legs close to body to shape whole bird for wrapping. Cuts birds into standard parts, using knife or power saw. Trims off fat, loose skin and unwanted bones, and places parts in separate containers. Pushes wheeled tub filled with whole poultry to work station. Lifts and inspects birds for soundness and suitability for packaging whole, and clips grade tag into skin. Wraps whole birds in self-adhering plastic sheeting or bags. Passes wrapped birds by conveyor through heat-sealing oven or hot-water- shrink bath, or seals bag using vacuum sealer. Packs parts in trays according to weight and brand specifications, inserts identification labels and wraps trays in printed, transparent self-adhering wrap. Weighs trays and marks weight on wrapping and places trays on conveyor. Places poultry into larger containers and weighs and marks weight on containers. Writes grade and weight of birds on tally sheet, calculates totals, using adding machine and attaches tally to container.

8215-274 CASING-RUNNING-MACHINE TENDER(slaught. & meat pack.)

DPT:685

casing shirrer.

GED: 2 SVP: 2 EC: I 4 PA: L 4

Gathers lengths of cured animal casings onto short metal tubes (sleeves) to facilitate sausage making:
Removes cured casing from tierce (cask). Selects and places sleeve over water pipe and fits end of casing over end of sleeve. Places revolving casing-stripping-wheel device over end of casing on sleeve and turns valve to flow water into casing to facilitate gathering of casing on sleeve. Removes loaded sleeve and places in container for later use.

8215-278 LINKING-MACHINE TENDER(slaught. & meat pack.)

DPT:685

frank-o-matic operator; ty-linker operator.

GED: 2 SVP: 2 EC: I 4 5 PA: L 4

Tends one or more machines that automatically tie or twist stuffed casings into links to form sausages:

Loads tubes of casings into hopper and threads string into tying mechanism of linking machines. Regulates length of links by turning screws. Starts machine and feeds end of stuffed casing into machine. Ties end of one casing to another by hand, as required to form continuous length. Hangs loop of linked casing on rack or smoke sticks on trolley for transfer to smoke room.

May set up machine.

8215-282 MEAT GRINDER(slaught. & meat pack.) DPT:685

grinder operator.

GED: 2 SVP: 2 EC: I 4 5 6 PA: H 3 4

Tends machine that grinds meat for use in manufacturing such foods as sausages, meat loaves and soups:

Pushes truck of cut meat from cooler room or storage to grinding machine. Selects and inserts grinding plate for specified particle size in machine, using special wrench. Loads meat into machine hopper, using power hoist, fork or shovel. Positions truck under discharge spout and starts machine. Removes filled truck and pushes it to chopping or mixing machine for further processing. Hoses down, scours and rinses all parts of machine and equipment, using scouring powder and brushes, upon completion of daily operations.

May cut chunks of meat into smaller pieces, using power-operated cleaver or slicer. May select, weigh and mix boneless meat in cooler room for grinding, using product formula. May add cereal or chopped suet to ground meat.

8215-286 MEAT-PRESS TENDER(slaught. & meat pack.)

DPT:685

GED: 2 SVP: 2 EC: I 4 5 PA: M 4

Tends machine that presses meat cuts to uniform shape and firmness to facilitate further processing:

Pushes trolley load of meat cuts, such as hog bellies, bacon or beef cuts from cooler room to press. Removes slabs of meat from trolley and positions meat under ram of press. Depresses pedal or pulls lever to compress meat to required shape. Raises ram and places meat in container or on conveyor leading to slicing machines.

May trim ragged edges and excess fat, using knife, and weigh meat slab on scales. May clean and oil press, using hot water hose and spray gun. May adjust pressure control of ram to accommodate various sized meat slabs. May be designated according to cut of meat pressed; for example,

Bacon-Press Tender

Belly-Press Operator

8215-290 MEAT-ROLLING-MACHINE TENDER(slaught. & meat pack.)

DPT:685

roll-tier, machine.

GED: 2 SVP: 2 EC: I 4 PA: M 4

Tends machine that binds boned hams, butts or roasts into rolls:

Threads twine through winding shaft, starts machine and binds meat, using one of the following methods. 1. Impales boneless meat-cut on spiked pivot. Pushes lever to engage metal rods around meat to shape roll and steps on treadle to wind twine in spiral around roll. Stops machine, cuts and ties twine, and slides bound roll off machine. 2. Places boneless meat-cut on bed of machine. Depresses pedal to actuate machine that wraps single loop of twine around roll and ties knot. Moves roll along machine bed and ties loops along length of roll. Trims ragged edges with knife and tosses roll onto truck or conveyor.

May bone out and trim hams or butts prior to binding.

8215-294 BUTCHER HELPER(ret. trade)

DPT:687

GED: 2 SVP: 2 EC: I 6 PA: H 4 7

Receives, stores, and grinds meat in retail establishment:

Unloads fresh, cured, and boxed meats and poultry from delivery truck manually. Transports meats to storage room on conveyor or using hand truck. Counts and weighs incoming articles and compares results against invoice. Examines and rotates meat in storage to avoid aging or spoilage. Cuts meat into small pieces suitable for grinding, and grinds for use as hamburgers, meat loaf, and sausage, using powered grinding machine. Cleans grinder, meat containers, and storage room with water hose and broom. Takes meat orders from customers.

8215-298 SAUSAGE TIER(slaught. & meat pack.) DPT:687

casing tier; link-and-tie girl.

GED: 2 SVP: 2 EC: I 4 PA: L 4

Twists or ties ends of casings filled with sausage meat to form linked products:

Ties one end of stuffed sausage casing with twine, or crimped metal clip to enclose contents. Makes string loop for hanging. Presses casing between thumb and index finger at end of link. Twists casing at pressure point to form link of specified length. Twirls remaining length of stuffed casing to complete additional uniform links. Ties ends of stuffed casings to make longer string of links to facilitate handling. Loops linked product over smoke stick and places on trolley to be transferred for further processing. Cuts out defective parts of casing and ties sound ends together. Strips meat from damaged casings for reuse.

May wind and tie lacing at regular intervals along salamis to decorate and reinforce casings.

8215-302 SEASONING MIXER(slaught. & meat pack.)

DPT:687

spice mixer.

GED: 2 SVP: 2 EC: I PA: M 4 7

Weights and mixes seasonings and prepares flavouring agents according to formula, for use in making sausage and luncheon meats:

Weights various spices on scales. Mixes ingredients by hand or in mixing machine. Dumps mixtures into containers and attaches

identification tags. Cubes cooked eggs, cheese, pimentos and pickles preparatory to making luncheon meats, using automatic cubing machine or press equipped with cutters. May grind whole peppers in grinding machine. May close end of casings stuffed with meat, using clipping tool, and stamp date and code on casings and sausage containers.

8215-306 MEAT-MOULD SEALER(slaught. & meat pack.) DPT:884
ham presser; mould-press man.
GED: 2 SVP: 2 EC: 1 4 5 6 PA: M 4

Fastens lids on filled metal meat moulds to prepare them for cooking, using press. Positions filled mould under pneumatic press and closes retainer. Adds meat to top of mould and levels with knife. Positions end and top plates on mould and depresses pedal or turns knob to actuate sealing press that secures plates and attaches lid-retaining springs. Transports moulds to cook tank, using hand truck, or places moulds on conveyor rack leading to cook room.

8215-310 MEAT-MOULD STRIPPER(slaught. & meat pack.) DPT:887
long-loaf remover.
GED: 2 SVP: 2 EC: 1 4 6 PA: M 4

Removes cooked meat products from metal moulds, performing any combination of the following duties: Carries filled moulds from truck or dipping basket to work table. Separates end plates and covers from moulds. Removes contents by striking mould against table, by using press or by inserting air-activated wedge blade into mould and lifting loosened contents onto table. Weighs meats and records weights on tags. Places meats on hand truck for further processing. Transports empty moulds and parts to washing machine, using hand truck. Cleans trucks, tables and equipment, using hot water hose, and sprays anti-corrosion oil over metal equipment. May place filled moulds in cook tank and tend tank during cooking operations. May tend mould parts washer.

Edible and Inedible By-Products Processing Occupations 8215-330 through 8215-362

8215-330 COOKER MAN, OFFAL(animal & veg. oil;slaught. & meat pack.) DPT:685
melter operator.
GED: 2 SVP: 3 EC: 1 3 4 5 6 7 PA: M 2 4

Tends cookers to extract grease and tallow from inedible offal, fat, blood meal and bones: Turns valves to admit steam to cooker. Starts pump and conveyors to load cooker. Observes gauges and adjusts valves to maintain desired vacuum or pressure throughout cook cycle. Takes sample of product to ensure cooking is completed as specified. Turns handwheel or raises lever to open discharge gate on completion of cook cycle. Reverses agitator paddles in cooker to force material into pans or conveyor leading to press that expels grease and tallow from mixture. Cleans machinery and work area, using steam hose, broom, mattock and shovel. May record production data.

8215-334 COOK, PET-FOOD(slaught. & meat pack.) DPT:685
GED: 2 SVP: 3 EC: 1 3 6 PA: L 4

Cooks and mixes meat and other ingredients in steam-jacketed kettles to make pet foods according to formulas: Dumps or pours pre-measured amounts of water and ground meat into kettles. Starts agitator to mix ingredients. Sets automatic controls to heat and cook contents at specified temperature. Opens valves to circulate mixtures through other kettles. Dumps pre-mixed seasonings, cereals and other ingredients into mixtures in specified amounts and at designated intervals. Starts pumps to transfer cooked product from kettles through cooler and into holding tank preparatory to packaging. Flushes out equipment, using hot-water hose. May test viscosity of mixture visually or using hydrometer. May tend cooker and extruder, and pump cereal mixture from cooker to extruder to make strands of material that are cut up and dried. May tend

coating reel that coats dried cereal with tallow, and conveyors that transfer coated dog food to packaging machines.

8215-338 LARD RENDERER(animal & veg. oil;slaught. & meat pack.) DPT:685
GED: 2 SVP: 3 EC: 1 3 4 5 PA: M 2 4

Tends steam-jacketed rendering tanks that cook edible animal fat to make liquid lard: Selects tank to be loaded with fat and bones and secures cover of loaded tank. Opens steam valve to heat contents of tank under pressure for specified time. Turns valves to transfer liquid lard into storage tank. Starts pump to transfer lard to filtering and bleaching department. Dumps or shovels residue from bottom of tank into truck or conveyor. May tend grinding machines and centrifuges that separate solids from liquid fats.

8215-342 RENDER MAN(animal & veg. oil;slaught. & meat pack.) DPT:685
tank-house man.
GED: 2 SVP: 3 EC: 1 3 4 6 7 PA: H 2 3 4

Tends equipment such as cooking tanks, presses or expellers, dryers, grinders, pumps and conveyors to prepare inedible offal, fat and bones for use in making soap, fertilizer and animal feeds, performing any combination of following duties: Opens valves to admit steam to cooker and starts pumps and conveyors to load cooker. Observes temperature gauges, rate of flow and condition of material and makes adjustments to meet specifications. Shovels or dumps lard tankage, blood and inedible or condemned parts of carcasses into chute or conveyor leading to grinder or cooker tanks. Cuts up small whole carcasses for rendering, using cleaver. Opens valves to drain or pump oil from surface of cooked offal and opens discharge trap to drop cooked material into trough leading to expellers. Starts dryer to evaporate moisture from cooked material and transfers product by truck or conveyor to storage bins. Starts milling and screening equipment to pulverize and sift tankage, cracklings and blood meal for bagging. Hangs bag on outlet of screening hopper and moves lever to discharge specified amount of material, and ties or sews mouth of bag, using overhead sewing machine. Removes solids and fats from waste water in catch basin, using skimming device. May tend equipment to cook, dry, mill and bag processed feathers for poultry feed. May be designated according to specific duty performed or equipment tended; for example, Bone-Process Tender Crackling-Press Operator Expeller Man Feather Cooker Tallow Pumper Tankage Grinder

8215-343 TALLOW-EXTRACTOR TENDER(animal & veg. oil) DPT:685
GED: 2 SVP: 3 EC: 1 4 5 6 7 PA: L 2 4 7

Tends extractor tank, distilling and condensing units, and auxiliary equipment to remove grease or tallow from cooked inedible animal parts, using solvent process: Starts screw conveyor that loads rendered materials into hopper of extractor tank, by depressing button on control panel. Turns valves to start and regulate condensing, distilling and cooling units, that separate hexane (solvent) from fat for reuse in extraction process. Depresses knobs or moves levers on control panel to start belt conveyor inside extractor tank, dryers and auxiliary equipment. Starts pumps to spray and control flow of hexane onto rendered material to remove fat from cooked meat and bones. Starts pumps to transfer grease, which has drained through perforated bed of extractor tank and through pipes, to settling tanks in tallow room, prior to refining. Observes extraction process in tank to verify normal progress and examines colour of mixture in piping system through sight glasses at various locations, to ensure separation of fat from hexane. Adjusts flow of fat and hexane mixture in pipe system and auxiliary equipment by moving levers or turning valves. Reads temperature and pressure gauges to ensure conformity to specifications and records readings for production control. Draws sample of tankage (dried, fat-free, rendered material), using shovel, and tactually examines material to ensure that it is fat-free. Starts screw conveyor to route dry

rendered material to grinding room. Performs cleaning and minor maintenance duties on machinery and equipment.
May spray naphtha and steam instead of hexane onto rendered materials in extractor tank.

8215-344 TALLOW REFINER(animal & veg. oil) DPT:685
GED: 2 SVP: 3 EC: I 4 5 7 PA: H 2 4 7

Tends filter press and auxiliary equipment used to refine tallow:
Turns valves to admit specified amount of tallow from storage tank into stabilizing and settling tanks. Observes gauges and turns steam valves to heat tallow in tanks. Fills mixing tank with specified quantity of boiling water and dumps pre-weighed amount of salt into tank. Starts pumps to force solution into tank to stabilize tallow, and allows water and impurities to settle to bottom of tank. Opens drain valve to remove water and impurities. Dumps specified amount of filtering or bleaching powder into tallow in settling tanks, and starts agitators to blend mixture. Inserts series of screen racks into filter press to remove impurities from tallow. Turns valves to control flow of tallow and pressurizing air into filter press. Observes colour of filtered tallow through sight-ports of pipe system and compares with standard samples to determine degree of filtration. Starts pumps and turns valves to transfer tallow to storage tanks, trucks, tank cars or shipping containers.

8215-346 TRIPE COOK(slaught. & meat pack.) DPT:685
GED: 2 SVP: 3 EC: I 4 6 7 PA: M 3 4 7

Tends equipment that cleans and cooks tripe, preparatory to further processing:
Trims cattle paunch (tripe) free of fat, using knife, slits paunch and discards contents. Spreads tripe over cone-shaped, revolving table for handscrubbing and spraying. Forks or dumps tripe into scalding or rinsing vat and adjusts valves to admit steam and water. Removes and inspects tripe on table and scrubs off residual foreign matter. Places tripe in cooker, measures and adds specified cleansing or bleaching agents and adjusts water and steam valves to fill and regulate temperature of cooker. Removes tripe from cooker after specified time and drains and chills before further processing. Cleans and oils equipment, using hot water hose, brush and oil-spray gun.
May cut and weigh cooked tripe and pack it in plastic bags. May pack and deliver tripe in bulk shipping containers for further processing, using hand truck.

8215-350 BLEACHER, LARD(animal & veg. oil;slaught. & meat pack.) DPT:685
GED: 2 SVP: 2 EC: I 6 PA: M 4

Tends equipment that bleaches and filters lard:
Turns valves and adjusts manual controls to start pumps that draw unrefined liquid lard from storage tank into bleaching kettle. Adds bleaching agent such as fuller's earth, using shovel or by emptying container, to absorb impurities in lard. Starts agitators to mix material. Turns valve to circulate steam through bleacher coils to maintain temperature as specified, and observes pressure and temperature gauges. Draws sample of bleached product for laboratory analysis and adds more bleaching agent as required. Inserts new cloths between filter-press plates. Starts pumps to force bleached lard from kettle through filter press and into storage tanks.

8215-354 BONE CRUSHER(slaught. & meat pack.) DPT:685
GED: 2 SVP: 2 EC: I 4 5 6 7 PA: M 3 4

Tends machine that crushes animal bones for use in making products such as soap, animal feed or glue:
Pushes buttons to start conveyors and bone crushing machine. Ensures that input conveyor and crushing machine function properly and output conveyor carries crushed material to cooking tanks, melters or roasters.
May fork bones from handtruck into machine. May weigh and record weight of truck load of bones.

8215-358 CENTRIFUGE TENDER(slaught. & meat pack.) DPT:685
blood separator.
GED: 2 SVP: 2 EC: I 3 4 6 7 PA: M 4

Tends centrifuge that separates cattle blood into hemoglobin and plasma for further processing:
Hangs pail under severed jugular vein of suspended carcass to collect blood. Tags pail to identify source of blood until carcass has been approved for use by inspector. Empties blood into centrifuge tank and starts machine that spins and separates blood into hemoglobin and plasma. Presses buttons to start pumps to transfer hemoglobin to rendering department for processing into feed and fertilizer and pump plasma to heat exchanger for chilling. Turns valve to drain chilled plasma into containers and delivers plasma to freezer or sausage department, using truck. Cleans equipment with disinfectant solution, hot water, hose and sponges.

8215-362 HOOV REMOVER(slaught. & meat pack.) DPT:685
dehoof.
GED: 2 SVP: 2 EC: I 3 4 5 6 7 PA: M 3 4

Tends equipment that separates hooves from severed cattle feet for further processing:
Opens steam and water valves to fill soaking tanks with hot water. Shovels or dumps severed cattle feet into baskets in tanks. Opens tank drain valve when soaking cycle is finished. Turns winch to lift baskets onto floor. Places single foot on bed of hoof-separator machine and depresses pedal to pinch and separate hooves from foot and drop hooves into hand truck. Tosses foot into other hand truck. Pushes trucks of hooves to dryer room, and trucks of feet to glue-rendering department for further processing.

8217-FISH CANNING, CURING AND PACKING OCCUPATIONS

This unit group includes occupations concerned with preparing, preserving and packing fish and shellfish for use as food and by-products, such as oil and meal. Includes cleaning, peeling, shucking, cutting, grinding, salting, smoking, dehydrating, freezing, cooking, canning and related activities.

8217-110 FISH-CUTTING-MACHINE SETTER(fish process.) DPT:680
filleting-machine setter; skinning-machine setter.
GED: 2 SVP: 5 EC: I 4 6 PA: M 3 4

Sets up battery of machines that fillet and skin fish:
Adjusts cams of cutting knives and feed mechanisms as specified by size of fish processed and type of fillet required, using hand tools. Adjusts dial of vibrating-cutting knife to remove required thickness of skin. Patrols work area and inspects fillets for appearance and quality, and makes any necessary adjustments to machines. Repairs or replaces defective machine parts after determining part names, numbers, functions and tolerances from manuals and catalogues. Performs maintenance work, such as cleaning, disinfecting and lubricating equipment, and sharpening knives, using power grinder or whetstone.

8217-112 FISH-BY-PRODUCTS PROCESSOR(fish process.) DPT:682
GED: 2 SVP: 4 EC: I 5 7 PA: L 2 4

Operates steam cooker and pressing, drying and grinding equipment to process fish by-products, and separate fish oil from cooked fish:
Turns valves to regulate steam pressure and temperature of cooker within specified range. Observes conveyor to ensure material is being fed to cooker continuously. Adjusts speed of conveyor as required, using hand wheel. Tends press to crush fish offal and extract fish oil liquor. Adjusts press to ensure maximum extraction of liquor from pressed fish and tests samples of pressed cake for conformity to moisture standards, using scale and oven.
May tend drier to remove excess moisture from cooked fish offal prior to grinding offal into meal. May mix fish meal with cereal or other additives to make animal or fish feeds. May perform routine maintenance.

nance on equipment, using hand tools. May be designated according to specialized activity; for example,
 Drier Tender
 Fish-Food Preparer
 Fish-Offal Processor
 Fish Presser
 Meal-Cake Former

8217-114 FISH SMOKER(fish process.) DPT:685
 GED: 2 SVP: 4 EC: I 3 4 7 PA: M 4 7

Tends smoke chamber in which fish are cured, performing any combination of the following duties:
 Empties bags of special sawdust and spreads evenly on smokehouse floor, using rake, or fills hopper of smoke chamber with wood chips and sawdust. Ignites wood and allows to smoulder. Pushes wheeled racks loaded with hanging fish or trays of fish into smoke chamber. Adjusts damper to regulate amount of smoke entering chamber. Examines colour and texture of fish periodically to ensure curing meets specifications. Removes racks from chamber and stacks cured fish on trays for packaging.
 May pack smoked fish and stamp identification data on package, using rubber stamp. May cut and barbecue (roast) smoked fish sections (tips) in electric oven. May remove ashes from chamber and clean racks, using brush and water hose.

8217-118 FISH-PRODUCTS MAKER(fish process.) DPT:585
 GED: 2 SVP: 3 EC: I 6 7 PA: M 4

Tends machinery that cuts, cooks and cools fish products, such as breaded fillets or fish sticks, performing any combination of the following duties:
 Fills hoppers of automatic feeding and cutting mechanisms with slices of frozen fish, premixed batter and breading materials. Presses buttons to start and stop feeding and cutting mechanisms, conveyors, pumps and cooling fans. Turns dial controls to regulate temperatures of cooking and cooling units and the viscosity and level of batter-mixer and breading-feeder units. Observes operation of equipment to detect malfunctions, and stops equipment to make minor repairs, such as replacing worn or dull cutting knives or to alter speed of feed mechanism, using hand tools. Cleans hopper and spouts of feeding mechanisms, using chlorine solution and brush or sponge. Starts pump to force cooking oil through filter to permit reuse. Records production data, such as weight of fish products made, batter and breading used, and length of time required to repair machinery.
 May be designated according to product made; for example,
 Fish-Stick-Machine Tender

8217-122 CENTRIFUGE TENDER(fish process.) DPT:685
fish-oil separator.
 GED: 2 SVP: 3 EC: I 4 5 PA: L 4

Tends battery of centrifuge machines that separate oil from fish liquor:
 Turns valves to admit steam to jacket of centrifuges to heat fish liquor. Starts pumps, opens valves and presses control buttons to feed heated fish liquor and oil to centrifuges, start centrifuges and transfer oil to receiving tanks. Observes gauges to determine when temperature is within prescribed range.
 May rub oil between fingers to detect grit and may reprocess substandard oil. May open valves to pump oil through one or more settling tanks to separate residual water from oil. May steam-clean centrifuges and settling tanks.

8217-126 SHELLFISH-PROCESSING-MACHINE TENDER(fish process.) DPT:685
 GED: 2 SVP: 3 EC: I 4 6 PA: H 4 6

Tends washing, blanching, brining, steaming, peeling or shucking machines and equipment to prepare shellfish for canning, freezing or fresh packing:
 Opens valves to admit water, steam or compressed air into machine vats or washing tanks. Adds specified quantities of salt or other materials. Lowers baskets of shellfish into vats by hand or hoist. Starts conveyors that transport products through machines and processing equipment, such as steam chambers, to blanch and steam open shellfish preparatory to shucking.
 May be designated according to machine tended, or kind of shellfish processed; for example,

Clam-Shucking-Machine Tender
 Clam Steamer
 Oyster Washer
 Shrimp Processor

8217-130 FISH CLEANER AND CUTTER(fish process.) DPT:684
 GED: 2 SVP: 2 EC: I 4 6 PA: M 4

Cleans and cuts fresh fish prior to processing or marketing, performing any combination of the following duties:
 Positions fish on cutting table, and scrapes away scales, cuts belly open from vent to throat, and removes viscera, gills and bruised parts, using knife. Cuts off head and discards into tub. Washes slime and blood from abdomen by dropping fish into tub of water, or using hose, and removes discolored membrane from cavity, using knife, scraper or spoon. Cuts fish behind gill slits, and draws knife along backbone and ribs to free boneless portion (fillet). Cuts alongside backbone through abdominal cavity to split fish into two sides. Draws knife laterally between skin and flesh to remove skin from fillet. Trims off pieces of bone, fins and fatty portions from fillet. Examines fillet to determine number and size of possible sections, cuts sections according to specifications, and scrapes pieces into container. Carries full container to weighing station. Sharpens knife, using whetstone.
 May lay fillet over illuminated glass to inspect fillets, and remove foreign matter with tweezers. May clean, wrap, label and freeze guests' catch of fish at resort or preserve catch by smoking or pickling.
 May be designated according to duty assigned; for example,
 Fillet Chopper

8217-134 SHELLFISH PROCESSOR, HAND(fish process.) DPT:684
 GED: 2 SVP: 2 EC: I 4 5 6 PA: L 4

Disjoints and removes meat from lobsters or other crustaceans, preparatory to canning or further processing:
 Disjoints cooked lobsters or crabs manually, preparatory to removal of meat, and deposits tail, claws and legs into separate trays. Splits claws and tail and removes meat, vein and roe, using knife and special tool. Clips ends of legs, using scissors. Feeds legs through rollers to press out meat, and deposits meat in tray.
 May pack meat in prescribed sequence in cans of specified weight. May tend machine that covers and seals cans of meat, and pack sealed cans in shipping cases or on trays for freezing. May tend machine that blends meat into paste, and fill cans with paste prior to sealing. May be designated according to type of shellfish processed; for example,
 Crab Butcher
 Lobster Processor
 Shrimp Peeler

8217-136 BASKET-FILTER TENDER(fish process.) DPT:685
 GED: 2 SVP: 2 EC: I 5 PA: H 3 4

Tends centrifugal-basket filters to remove solids from fish liquor:
 Starts rotation of filters and flow of liquor from centrifuges into filters by pressing buttons and turning valves. Observes filters and stops each one when mesh is blocked by solids and liquor begins to flow over top of basket. Empties solids from basket by raising steel shield from bottom of basket, up centre post of basket, using steel rod. Scrapes solids from inside of basket with hand-held steel scraper, allowing solids to fall through bottom opening onto screw-type conveyor. Replaces shield at bottom of basket. Cleans filters, using steam hose.

8217-138 DRIER-AND-GRINDER TENDER(fish process.) DPT:685
fish-meal grinder.
 GED: 2 SVP: 2 EC: I 7 PA: L

Tends rotary drier to remove moisture from fish-meal cake, and grinder to grind cake into meal:
 Starts conveyor to move fish-meal cake from press to drier and through drier to grinder. Monitors drier temperature and adjusts controls. Periodically tests moisture content of dried cake by taking sample, weighing, heating for prescribed time and reweighing. Adjusts temperature when tests indicate excess moisture is present.
 Tends grinder to grind dried cake into meal.
 May carry out running adjustments. May repair and overhaul equipment during slack period

8217-142 FISH-CAKE MAKER(fish process.) DPT:685
GED: 2 SVP: 2 EC: I 4 7 PA: M 4

Tends machines and equipment that grind, mix, form and cook fish to make fish cakes:
Transports trays of boned, steamed fish from cooker to work table.
Weighs specified quantity of fish, using balance scales. Places fish in machine that grinds it into paste. Places paste in mixing machine and adds specified amounts of ingredients, such as flour, water and spices.
Feeds mixture into extrusion machine that forms and deposits fish cakes in steam cooker or deep-fat fryer. Wraps cooked product in wax paper. Cleans work table, machines and equipment, using water hose, sponge and cloths.

8217-146 SHELLFISH-SEPARATOR TENDER(fish process.) DPT:685
GED: 2 SVP: 2 EC: I 4 6 PA: M 3 4

Tends machine that removes shell particles and sand from raw shellfish meats preparatory to processing:
Turns valves to admit water and compressed air into separator vat.
Dumps shucked or peeled meats into vat. Adjusts volume of air and operating time cycle according to bulk and condition of meats. Moves cleaned meats to conveyor, using scoop or colander. Drains vat to remove shells and sand from bottom.
May weigh cleaned shellfish meats and record production data.

8217-150 FISH-EGG PROCESSOR(fish process.) DPT:687
GED: 2 SVP: 2 EC: I 4 7 PA: H 3 4 7

Cleans, dyes, cooks and packs fish eggs for commercial purposes, working as member of crew:
Rubs cluster of eggs over table to separate them from membrane.
Dumps eggs into vat and flushes away foreign matter, using hose.
Shovels eggs into pot containing dye and brine solution and starts power agitator to dye eggs uniformly. Dumps dyed eggs into sieve for draining, and shovels eggs into kettle to be cooked for specified time.
Shovels cooked eggs into grading sieve, for sorting according to size.
Fills jars with eggs sorted according to colour and size.
May prepare curing solutions according to formulas. May pour brine-cured fish eggs into jars or shipping containers for sale as salmon caviar.

8221-FRUIT AND VEGETABLE CANNING, PRESERVING AND PACKING OCCUPATIONS

This unit group includes occupations concerned with preparing and preserving fruit and vegetables by canning, dehydrating, freezing, pickling, or by using sugar or other preservatives. Occupations concerned with preparing and cooking fruits and vegetables in hotels, restaurants and other non-manufacturing establishments are classified in Unit Group 6121, CHEFS AND COOKS. Occupations concerned with cooking fruits and vegetables for preserving are classified in Unit Group 8229, FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS, N.E.C.

8221-110 CANDIED-FRUIT PROCESSOR(can. & preserv., n.e.c.) DPT:685
GED: 3 SVP: 4 EC: I 4 PA: M 4

Tends equipment to prepare flavouring and preservative solutions, and make products, such as maraschino cherries or cut fruit peel, performing any combination of following duties:
Weighs colouring, flavouring and preservative ingredients according to formulas, and dumps materials into steam-jacketed kettle. Turns valves to admit water into kettle and steam into jacket to heat solutions as specified. Stirrs and blends ingredients in solution, using portable power mixer or wooden paddle. Washes cherries in barrels to remove preservative coating, drains wash water and refills barrels with specified flavouring and preservative solutions. Dumps barrels of whole fruit or cut peel into vats, using mechanical dumper, and adds brine solution and lime to bleach and firm fruit. Turns valves and regulates flow of coloured sugar solution through sprays to coat fruit and cut peel. Pumps surplus sugar solution from vats into pasteurizer,

and to storage tanks for re-use. Loads processed fruit and peel into hopper of slicing machine, using pail or shovel.
May direct other workers engaged in sorting and packaging fruit for shipment. May be designated according to kind of fruit processed; for example,
Processor, Fruit-Peel
Processor, Maraschino Cherries

8221-114 MINCEMEAT MAKER(can. & preserv., n.e.c.) DPT:485
GED: 2 SVP: 3 EC: I 4 PA: M 4

Weighs, measures and mixes ingredients according to formula, to make mincemeat:
Weighs or measures ingredients; such as, raisins, currants, ground orange peel, salt, spices and hot water, using platform scales and measuring containers. Dumps ingredients into mixing machine equipped with paddle, turns wheels and pushes buttons to start machine, or dumps and mixes ingredients in trough, using portable beater. Allows mixture to cool. Mixes premeasured quantities of ground meat or suet with cooled mixture. Observes colour of product and tests consistency, using hand paddle. Scoops or pours product from machine or trough into containers for further processing.
May remove sample of mincemeat for laboratory analysis. May record daily production data.

8221-118 FREEZE-DRY-FOOD PROCESSOR(can. & preserv., n.e.c.) DPT:685
freeze-dry-machine tender.
GED: 2 SVP: 3 EC: I 2 6 PA: M 3 4

Tends freeze-dry equipment to preserve food, such as fruit, vegetables and mushrooms:
Loads trays with portions of fresh or frozen foods. Places trays on conveyor or on shelves in freeze-dry chamber. Actuates switches to begin heat-dry, vacuum and freeze cycle in chamber. Sets timer controls, and monitors heating and cooling cycle of freeze-dry program specified for the food processed. Opens chamber door and places frozen-dried foods onto conveyors to packaging and shipping or storage areas.
May package frozen foods, and apply identification labels to packages. May record production data.

8221-122 VEGETABLE PICKLER(can. & preserv., n.e.c.) DPT:687
pickleman.
GED: 2 SVP: 3 EC: I 4 PA: M 3 4 7

Pickles vegetables in preservative or flavouring solutions:
Mixes ingredients such as salt, vinegar or sugar in barrels, vats or tanks according to formula, to make pickling or flavouring brine. Dumps vegetables into brine to soak and cure for specified time. Removes contents from containers by hand or with dip net. Washes, soaks and de-salts pickled product in special solution, prior to further processing or packing. Cleans and lubricates equipment using cleansers, brushes, cloths and oil can.
May grind horseradish roots, and mix powder with vinegar and other ingredients, according to formula, to make condiment. May pack product into barrels in layers covered with dry preservative such as salt. May tend equipment that separates specific vegetables according to weight and size.

8221-134 VEGETABLE-DRIER TENDER(can. & preserv., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 4 6 PA: L 4

Tends drying machine that removes moisture from potatoes or other cooked vegetables to make instant or dried products:
Actuates switch to transfer cooked vegetable mash from cooker hopper by auger-type conveyor, and turns control valves to uniformly coat heated revolving cylinder that removes moisture from mash. Observes dried mash as it passes from cylinder and between rollers, and removes any foreign material. Monitors machine operation as mash is compressed into sheets, scraped from rollers and dropped into auger-type conveyor leading to sizing screen that breaks material into flakes.
May be designated according to product dried; for example,
Instant-Potato Maker

- 8221-126 BLANCHING-MACHINE TENDER**(can. & preserv., n.e.c.) DPT:685
blancher.
GED: 2 SVP: 3 EC: I 3 4 PA: L 4 7

Tends machine that blanches fruits and vegetables preparatory to canning and preserving:

Observes gauges, sets controls, and turns valves to fill machine with water and admit steam, and to regulate temperature and blanching time. Starts machine, conveyor or pumps to feed and remove produce from machine. Feels and visually examines blanched product to determine adequacy of softening and colour change.

May fill and weigh containers of blanched products. May blanch other foods, such as nuts and rice. May manually feed paste products, such as spaghetti and noodles into blanching machine. May record daily production of blanched foods.

- 8221-130 LYE-PEEL TENDER**(can. & preserv., n.e.c.) DPT:685
steam-peeler tender.
GED: 2 SVP: 3 EC: I 4 6 7 PA: L 4 7

Tends equipment that removes skins of fruits and vegetables prior to cooking and preserving:

Turns valves to admit steam to heat lye solution in tank and to regulate lye and water sprays. Starts conveyor to carry produce through immersion tank and sprays. Observes and feels emerging fruit or vegetables to ensure complete removal of skins, and increases immersion time as required.

May prepare lye solution by dumping lye chips into tank, using hoist, and test strength of solution, using hydrometer. May load conveyor with fruit or vegetables by hand. May scald produce with steam to loosen or remove skin or peel.

- 8221-138 FOOD-COOLING-PAN TENDER**(can. & preserv., n.e.c.) DPT:585
GED: 2 SVP: 2 EC: I 4 6 PA: M 4 7

Tends equipment that cools food, such as soups or jams during processing, or prior to bottling or canning:

Turns valve to admit coolant into jacket or coil of cooling tank, or inserts portable cooling coil into container filled with hot food and adjusts flow of coolant through coil. Skims foam from top of material, using ladle or fine mesh skimmer, and stirs material with paddle to prevent coagulation and permit even cooling. Observes thickening and starts pump, or opens dump valve to transfer product to next process or to container-filling machine when desired consistency or temperature is reached. Draws food sample for laboratory analysis, and records batch data.

May truck cooled product to next process or storage area. May clean and sterilize cooling equipment by circulating sterilizing solution through piping and using brush and cloths.

- 8221-142 BRINE-TANK-SEPARATOR TENDER**(can. & preserv., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 4 PA: L 4 7

Tends brine-filled tanks and equipment that separates tender young peas or other vegetables from mature ones preparatory to preserving:

Turns valves and actuates switches to pump water and brine solution to predetermined level in tanks, and to start conveyors to fill tanks with ungraded vegetables. Monitors automatic equipment that skims tender vegetables floating on surface of brine mixture and removes mature vegetables from tank bottoms. Tests specific gravity of brine solution, using hydrometer, and reports variances from specifications. Maintains specified level of brine in tanks. Cleans tanks and work area, using water hose and scrapers.

May tend equipment to mix brine solution and pump solution to storage tank.

- 8221-144 DUMPING-MACHINE TENDER**(can. & preserv., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: H 4 7

Tends machine that automatically dumps containers of fruit, vegetables or other foods onto conveyor or into vats, for processing:

Directs fork-lift operator in positioning full tote boxes on feed conveyor or platform. Starts machine that automatically grips, tilts

and dumps tote boxes of fruit or produce onto conveyor for subsequent washing, cutting or peeling, and returns empty boxes. Clears blockages and controls flow of material by starting and stopping conveyor.

May lubricate and make minor adjustments to machine. May clean machine and work area, using hot water hose, brushes and hand tools.

- 8221-146 POTATO-PEELING-MACHINE TENDER**(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 4 PA: L 4 7

Tends machine that cleans, washes and peels potatoes preparatory to cooking dehydration:

Starts loaded machine by pressing button or moving lever to clean off foreign material, wash, and convey potatoes through revolving abrasive disks. Observes operation of equipment to prevent blockages and ensure removal of skin. Pushes levers to regulate flow of potatoes over abrasive rollers of continuous-type machine, to control amount of skin removed. Inspects peeled potatoes passing on conveyor and discards unsuitable product or cuts away oversized or unsuitable potato parts, using knife.

May load potatoes into hopper of machine manually or using hoist.

- 8221-150 BULK FILLER**(can. & preserv., n.e.c.) DPT:687
tubman.
GED: 2 SVP: 2 EC: B 4 PA: H 3 4 7

Fills tubs, barrels or other containers with processed food products and ingredients for preserving:

Dumps foods, such as pickles, cucumbers or beets into wooden tub, barrel or storage tank. Measures and adds prescribed amounts of preservatives; such as, salt, sugar, brine, syrup, or vinegar. Covers container with lid and affixes identifying label. Removes food sample for laboratory analysis, using ladle and sample bottle. Cleans equipment and work area, using detergent, scrubbing brush and warm water.

May transport filled containers to storage area, using forklift truck or handtruck.

8223-MILK PROCESSING AND RELATED OCCUPATIONS

This unit group includes occupations concerned with processing raw milk and cream to make pasteurized milk and cream, butter, cheese, ice cream, frozen novelties and other dairy products. Activities include: blending, churning, coating, cooking, cooling, cutting, decorating, dehydrating, fermenting, grinding, freezing, homogenizing, moulding, pasteurizing and separating dairy products.

Milk and Butter-Making Occupations 8223-110 through 8223-138

- 8223-110 MILK-PROCESSING-EQUIPMENT OPERATOR**(dairy) DPT:562
GED: 3 SVP: 6 EC: I 3 4 5 6 PA: M 2 3 4

Controls continuous flow or vat-type equipment to process fresh milk and cream according to standard procedures, performing any combination of the following duties:

Connects piping between vats and processing equipment and assembles fittings and parts, using hand tools to prepare equipment for operation. Turns valves and starts pumps to force washing, sterilizing and rinsing solutions through processing pipes and equipment, and to spray inside of vats. Starts process pumps and equipment, monitors temperature and pressure gauges, and opens valves to transfer milk to centrifuge that separates cream from milk, through homogenizer that emulsifies milk, and through filter that removes sediment. Opens valves to transfer required amounts of cream or skim milk into standardizing tank to adjust butterfat content of milk to specification. Turns valves to admit steam and water into pipes or vat to pasteurize milk and to circulate refrigerant through coils to cool milk. Tests products for acidity at various stages of processing, by titration or using pH meter. Opens valves and starts pumps to transfer products to

bottling or packaging machines. Tends equipment that packages or bottles milk and other dairy products in cardboard, glass or plastic containers. Records process and production data. Directs other worker to clean equipment and work area, using steam hose, hot water and soap.

May be designated according to type of equipment operated; for example,

Homogenizer Operator
Pasteurizer Operator
Separator Operator
Standardization Man

8223-114 SPECIALTY-PRODUCTS MAKER(dairy) DPT:562
GED: 3 SVP: 6 EC: I 3 4 5 6 PA: H 3 4

Operates processing equipment to make specialty-dairy products such as whipping, table and coffee cream, chocolate drink, yogurt, butter-milk and eggnog:

Transports specified ingredients such as sugar, stabilizer, cocoa, flavouring or bacterial agents from storage to pasteurizer, using hand truck. Turns valves to admit fluid milk and cream into pasteurizer in specified quantities. Selects, measures and adds ingredients such as bacterial agents or flavouring, according to recipe for product. Adds fluid or powdered milk to correct mixture to proper butterfat content, as indicated by butterfat tests. Heats mixture to pasteurizing temperature for required time. Connects pipes between pasteurizer, mixer, homogenizer or cooler units, and actuates valve and pump controls to transfer mixtures through equipment into storage tanks or packaging machines. Sends samples for laboratory analysis. Checks weight of packed containers, using balance scale. Records process and production data. Dismantles and cleans machines, or directs other worker to clean equipment and work area after each production run, using hot-water hose, soap, cloths and squeegee.

May pour fruit juice concentrate into tank and add required amount of water to reconstitute juice and make breakfast drinks. May prepare and ripen bacterial cultures in sterile or skim-milk solutions. May be designated according to product made; for example,
Chocolate-Milk Mixer
Yogurt Maker

8223-118 BUTTER MAKER(dairy) DPT:682
GED: 3 SVP: 6 EC: I 2 4 6 PA: H 3 5 7

Controls equipment to make butter, using either batch or continuous-process churning method:

Connects sanitary piping between cream storage vat and churn, using hand tools, and actuates controls to pump sterilizing solution through equipment prior to commencement of churning process. Pumps measured amount of pasteurized cream into batch-type churn and starts churn, or sets controls to regulate cream flow and starts continuous churning equipment. Observes separation of buttermilk from butter through window, and pumps buttermilk from churn. Compares butter with colour chart and adds colouring or adjusts flow of colouring material into churn to meet standards. Tests butter for moisture, salt content and consistency, using testing apparatus, and adjusts equipment for conformity with specifications. Examines, smells and tastes butter to determine grade. Removes butter from churn and loads it into moulding-and-packaging-machine hopper, or places empty cartons in packaging unit at discharge end of continuous-process churn. Checks weight of samples of packaged butter, using scales and adjusts mould setting to conform with weight specifications. Lifts filled cartons onto truck and transports cartons to cold-storage room. Cleans and flushes piping and churning equipment, using solvents and warm water.

8223-122 DRIER OPERATOR(dairy) DPT:682
GED: 3 SVP: 4 EC: I 3 5 PA: L 4 7

Controls vacuum-drying equipment to convert fluid milk into powder of specified moisture content:

Places charts in temperature and vacuum recorders. Starts gas-fired drier, vacuum pump and circulating fan by pressing control buttons, and adjusts dampers manually. Turns drier controls and observes gauges to obtain specified temperature and vacuum. Starts pump and turns valves to spray milk into heated vacuum chamber where milk droplets are dried into powder. Tests powder with moisture meter or by placing sample on scale under heating lamp. Observes interior walls of chamber through porthole for burned scale, indicating excessive temperature. Adjusts drier temperature and volume of liquid sprayed into drier to obtain specified moisture content and prevent contamination

tion of powder by scale. Places container on weigh scale under drier outlet to fill for shipment.

May couple spray unit between pipeline and drier, using wrench. May dry specific product and be designated accordingly,
Skim-Milk-Drier Operator

8223-126 MILK AND CREAM RECEIVER(dairy) DPT:584
GED: 2 SVP: 3 EC: I 4 5 PA: M 4 7

Receives milk or cream from tank trucks or in cans at creamery or dairy, performing any combination of the following duties:

Connects plastic hose between sanitary valves of truck and tank, starts pump and turns valve to transfer milk to receiving tank. Turns valves of can washing cabinet to clean exterior of cans. Starts conveyor to transfer cans to intake room. Loosens can covers by tapping with mallet, and places covers on conveyor rack. Empties cans of milk or cream into weigh vat, and slides empty cans onto conveyor. Observes, smells and tastes liquid to detect sourness, and draws sample with dipper. Tests sample for acidity, butterfat and sediment, using testing apparatus. Records amount of milk pumped, by weighing truck before and after pumping, by observing automatic flowmeter reading, or by placing ticket in automatic meter of weigh scales.

8223-130 CANNED-MILK STERILIZER(dairy) DPT:585
GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Tends continuous-process-canning machine that cooks and sterilizes canned milk:

Turns valves to admit steam, water and hot air into heating, cooking, cooling and drying chambers of machine, and monitors gauges to adjust and maintain temperature. Observes dials and panel-control lights that indicate machine failure. Removes jammed cans when conveyor stops, to prevent overcooking milk in process. Observes sealed cans of milk moving through chambers, and discards damaged tins for reprocessing. Removes sample test cans for inspection according to test program. Opens samples and dips spoon into contents and observes texture, viscosity and colour of sterilized milk and notifies laboratory of variances from standards. Reads automatic data recorder and prepares production report. Fills tank of sterilizing unit with heated cleansing solution and flushes tank with water to clean unit between production runs.

May examine and re-pack cans of milk in shipping containers and replace soiled labels, using glue and brush.

8223-134 MILK-POWDER GRINDER(dairy) DPT:685
casein grinder.
GED: 2 SVP: 2 EC: I 5 7 PA: H 3 4

Tends equipment that grinds and sifts milk and casein powders:

Stoops to fasten specified screen in sifter, using hand tools, and pushes buttons to start hammermill, vibrating-sifter and tank agitator. Starts conveyor that transfers coarse dried milk powder or casein from sifter to hammermill, and turns crank to alter speed of hammermill to obtain specified fineness. Observes and listens to equipment to detect malfunctions. Starts pneumatic vacuum blower to convey ground powder through sifter to holding tank. Fills large bags or barrels with powder from holding tank outlet and places filled containers on skids for removal to storage.

8223-138 DAIRY HELPER(dairy) DPT:686
GED: 2 SVP: 2 EC: I 2 4 5 6 PA: H 2 3 4

Helps dairymen to prepare dairy products, performing any combination of the following duties:

Scrubs and cleans pipes, fittings and process machines with sterilizing solution, using brush, sponge and cloths. Attaches pipes and fittings to machines, using wrenches. Examines raw milk for dirt and odour, and dumps milk into receiving tank. Dumps milk, cream, butter or cottage cheese into vats or machine hoppers. Starts and stops machines and equipment as directed. Cuts butter and cottage cheese into squares, using knives. Pulls lever on hopper to fill containers with powdered milk. Weighs containers on scale and moves containers to storage or shipping areas, using hand truck, conveyor or electric-fork-lift truck. Places empty bottles, cases and cans onto conveyor to be transferred to receiving, washing or filling stations. See also definition for term title, 02-160 HELPER (any ind.).

May package or bottle milk or other dairy products in cardboard, glass or plastic containers.

Ice-Cream-Making Occupations
8223-158 through 8223-174

8223-158 ICE-CREAM MAKER(dairy) DPT:682
GED: 3 SVP: 5 EC: I 4 5 PA: L 4 7

Operates one or more continuous freezers and associated equipment to make ice-cream products:

Assembles pipes and fittings to connect machines. Places novelty dies in filler head, using wrenches. Weighs, measures and dumps ingredients such as powder, colouring, flavouring, or syrup into mixing vat, fruit feeder, or holder of rippling pump. Starts agitators, beaters, scrapers and pumps, and turns valves to blend and force mixture and air into freezer barrels, and refrigerant into coils. Observes ammeter and pressure gauge on barrel and adjusts controls to proper temperature and speed. Sets feed controls according to freezer speed to ripple ingredients into mixture leaving freezer barrel. Opens valve to transfer contents to filling machine that pumps ice cream into cartons, cups, cones, or moulds for pies, rolls or tarts. Weighs package and adjusts freezer air valve, or filler head to deposit specified quantity of product in container. Cleans equipment between product runs or at conclusion of daily production, using sterilizing solution or steam spray.

8223-162 ICE-CREAM DECORATOR(dairy) DPT:584
GED: 3 SVP: 5 EC: I 4 PA: L 4 7

Moulds and decorates ice-cream specialties:

Packs ice cream ingredients into metal moulds shaped as flowers, fruit, animals, cakes, pies, and seasonal or festive figures, using spoon, knife or spatula. Presses mould pieces together and places mould in hardening cabinet. Immerses hardened moulds in water, pries defrosted moulds open and removes confection, using knife. Whips cream, sugar and food colouring, using mechanical beater to prepare decorative creams of specified colours and consistency. Places desired extrusion tips into bottom of icing bag, and fills it with whipped cream. Presses icing bag and moves it over confection to create specified designs or artistic figures. Holds confection under stencil and stencils design onto confection with whipped cream, using spatula, or sprays colouring through stencil to form wording, using spray gun. Places paper, plastic or metal decorations, candies or nuts on confection as specified, and places finished specialty item on packaging conveyor.

8223-166 FROZEN-STICK-NOVELTY MAKER(dairy) DPT:585
GED: 3 SVP: 4 EC: I 4 6 PA: L 4

Tends machines and equipment to mould, freeze, and coat ice-cream or sherbet-type frozen-stick confections:

Connects multiple-spout-filling attachment to novelty-moulding machine, using hand tools. Fills dispensers of bagging and stick inserting machines, adjusts machine guides and clears blockages, using hand tools. Positions mould pan under filler spouts and presses pedal to fill moulds with ice cream, fruit juice or syrup mixture, and places filled pan on brine-tank (freezer) conveyor. Places slotted tray (mould-pan cover) against stick dispenser, and pushes levers to insert and lock sticks in tray slots. Inserts trays into mould pans to insert sticks in novelties and depresses pedal to start conveyor passing through freezing, removal and wrapping units. Dips trays of frozen ice-cream novelties into hot chocolate coating, and places tray on conveyor passing through chill tunnel. Observes gauges, turns valves and moves control switches to correct level of mix deposited into moulds, flow of ingredients into filler hopper and chocolate tank, or temperature of brine, water or chocolate. Tests brine, using hydrometer, and adds salt to maintain required density. Places empty mould pans on conveyor returning to filler spouts. Records quantities of ingredients used and other production data. Cleans equipment and work area, using hot-water hose, brushes, cleansers and squeegee.

May operate continuous freezer and associated equipment to freeze ice-cream mix to semi-solid consistency preparatory to making frozen-stick confections. May mix flavouring extracts, colouring, sugar and water in tanks according to formula, and tend machine that fills, seals and freezes mixture in tubelike plastic film containers. May be designated according to novelty produced, or duties performed; for example,

Icicle Man
Mould Filler
Mould Remover
Stick-Machine Man

8223-170 ICE-CREAM-NOVELTY MAKER(dairy) DPT:685
GED: 2 SVP: 4 EC: I 4 6 PA: L 4 7

Tends ice-cream machine that freezes, extrudes, cuts, coats and wraps stickless ice-cream novelties:

Turns valves and sets thermostat to circulate refrigerant and maintain specified temperatures in machine. Inserts forming fixtures in nozzles of machine to extrude specified shape of ice-cream ribbons for bar, patty or roll-shaped products. Starts pump and turns steam valve to fill and heat chocolate in enrobing tank to specified temperature. Actuates controls of machines that extrudes and cuts ice-cream ribbon into measured portions onto conveyor pallets moving through hardening box, and under chocolate or other coating spray, or wafer machine to automatic wrapping unit. Observes ice-cream moving through freezer and adjusts freezer-air-intake lever to obtain specified consistency of ice-cream. Brushes conveyor pallets to remove frost, and cleans equipment, using hot-water hose and brushes.

May adjust controls to synchronize conveyor with freezer speed or to change hardening temperature. May adjust automatic wrapping mechanism. May be designated according to product made; for example,

Eskimo-Pie Maker
Ice-Cream-Sandwich Maker

8223-174 ICE-CREAM WORKER(dairy) DPT:686
GED: 2 SVP: 2 EC: I 2 4 5 6 PA: M 3 4

Helps dairy worker to make bulk ice-cream or ice-cream novelties, by performing any combination of the following duties:

Pours cans of fruit into sieve to separate juice. Places cans of chocolate coating into hot-water vat or pushes barrels of chocolate into heating unit. Adds specified amount of water to chocolate to decrease its viscosity. Measures specified kinds and amounts of ingredients, such as ice-cream mix, fruit, flavouring and colouring. Dumps ingredients as directed into mixing tank, and starts pump to maintain continuous flow of mixture into freezer. Adjusts guides or controls of automatic carton-forming, filling and wrapping machines. Shapes and feeds carton blanks, bottoms and rims into carton-forming machine. Holds bulk cartons under filler head to fill cartons with ice-cream. Packs ice-cream novelties manually. Weighs filled cartons.

May decorate ice-cream novelties, rolls, cakes or pies with whipped cream, candies, nuts or coloured topping, working as a member of a team. See also definition for term title, 02-160 HELPER (any ind.).

Cheese-Making Occupations
8223-194 through 8223-226

8223-194 PROCESS-CHEESE FORMULATOR(dairy) DPT:487

cheese blender.

GED: 4 SVP: 6 EC: I 7 PA: L 4 7

Computes quantities, grades and types of cheese required for blending and making processed-cheese products:

Selects cheeses required to make specified blend by feeling, tasting, smelling and observing various types of cheese for firmness, mellow-ness, acidity and colour. Calculates quantities of each type of cheese required to make blended batch according to formula, and records quantities, grades and types of cheese on charts or batch work order. Compares laboratory reports of various types of cheese with specifications, and amends chart or batch work order to achieve finished blend having specified body, texture, flavour, moisture, fat, acidity and salinity.

May test cheese during blending process to ensure conformity with specifications.

8223-198 CHEESE MAKER(dairy) DPT:462
GED: 3 SVP: 5 EC: I 4 PA: M 3 4 7

Controls equipment that cooks milk and specified ingredients to make cheddar or natural cheese, and forms and cures cheese according to specifications:

Actuates panel controls to pasteurize milk, and separate it to obtain prescribed butter fat content. Turns valves to fill vats with milk and admit steam to heating coil that heats milk to specified temperature. Dumps measured amounts of colouring agent and lactic culture into milk. Moves controls to start agitators, and mixes ingredients until specified level of acidity is reached. Removes and tests samples of milk mixture, using pipette and acidimeter. Dumps and stirs prescribed

quantity of rennet (coagulant) into mixture. Stops agitators to allow mixture to form curd. Pulls curd knives through curd or uses handcoop to separate curd and release whey. Observes thermometers, adjusts steam valve and starts agitators to stir and cook curd until desired firmness and texture are attained. Squeezes and stretches samples of cooked curd to test for proper firmness and texture. Directs other workers who add ingredients, such as seasonings, and cut, pile, mill and mould curd into specified cheese shapes, and places or turns cheeses on shelves for curing. Removes sample plugs of cured cheese, using trier (auger-like plunger), and tastes, smells, feels and observes samples for quality. Records ingredients used, processing data, and test results. Calculates variations in time cycles and quantities of ingredients for subsequent batches. May dump specified lactic culture into milk or whey in pasteurizer to make bulk lactic bacteria culture.

8223-202 COTTAGE-CHEESE MAKER(dairy) DPT:582
GED: 3 SVP: 4 EC: I 4 PA: H 3 4 7

Controls equipment to make cottage cheese from milk:

Turns valves and monitors flowmeters to admit specified amounts of milk, lactic culture and rennet (coagulant) into sterilized vat. Turns steam and water valves to heat milk and ingredients at prescribed temperature for specified time to incubate culture. Starts agitator in vat or stirs ingredients, using paddle. Tests sample of whey for acidity, using pH meter. Cuts curd with knife to drain off whey. Monitors thermometer and adjusts steam and water valves to slowly raise temperature to cook curd. Breaks off and feels sample of curd to determine when it is sufficiently cooked. Opens cold-water and drain valves to wash cooked curd and remove whey. Tastes cheese to test salinity and acidity. Shovels finished cottage cheese into large trays and loads trays onto dolly. Records processing data. Washes vat and tools with sterilizing solution and rinse water.

May make lactic culture. May drain uncooked whole curd from vat into porous bags to remove whey, and dump residual curd into blending machine to make baker's cheese. May stir specified amount of cream into washed curds to make creamed cottage cheese.

8223-206 CHEESE-MAKER HELPER(dairy) DPT:685
GED: 3 SVP: 4 EC: I 4 PA: H 3 4

Helps to make cheddar or natural cheese, by performing any combination of the following duties:

Tends separating and pasteurizing equipment to prepare milk. Starts pump, monitors gauges and turns valves, as directed, to fill vats with specified amount of milk, and to heat and maintain milk at specified temperature. Dumps specified amounts of colouring and lactic culture into milk. Starts agitators to mix ingredients. Adds rennet (coagulant) to coagulate milk into curd, and presses, salts, cuts and drains curds to remove residual whey. Pierces, washes and turns cheese blocks or moulded circular cheeses to promote curing. Immerses cheese in liquid paraffin to apply protective coating. Loads packaged cheese onto pallets, and transports to storage area, using powered lift truck. Washes moulds, vats and agitators, and tends machines to wash and dry cloths used in cheese making. See also definition for term title, 02-160 HELPER (any ind.).

8223-210 COOKER, PROCESS CHEESE(dairy) DPT:685
GED: 3 SVP: 4 EC: I 4 6 7 PA: M 4 7

Tends vat to cook blended cheeses or cheese curd and other ingredients to make process cheese:

Starts agitator and signals for cheese materials to be dropped into vat. Sets steam valve and observes thermometer to heat vat to specified temperature. Measures or weighs out prescribed ingredients such as sodium citrate, disodium phosphate and cream, using scale and measuring glass. Dumps ingredients into vat, and cooks mixture for specified time, or observes consistency of mixture to determine when cooking is complete. Pulls lever to drain cheese mixture into container, or turns valve to transfer liquid cheese into moulding or slice-making machine. Cleans vat at end of production runs.

May pump cheese through blending machine to impart finer texture. May mix unheated cheese or cheese curd and other ingredients to make cold pack or creamed cheese and be designated accordingly, Cream-Cheese Maker

8223-214 SLICED-CHEESE MAKER(dairy) DPT:565
GED: 2 SVP: 4 EC: I PA: L 4 7

Tends machine that forms, cools and cuts process cheese into slices of specified size and weight:

Places forming die into manifold of cheese hopper. Starts refrigerant pump and observes thermometer to ensure conveyor is cooled to specified temperature. Starts and sets speed of cheese pump which forces cheese through openings in manifold to form ribbons of cheese of specified width and thickness. Threads ribbons of cooled cheese through machine that stacks, cuts and weighs them. Observes lights on panelboard which indicate weight of cheese stacks coming off automatic cutter, weigher and counter. Alters speed of cheese pump or presses button to automatically re-set speed of convey to obtain cheese portions of specified weight. Places cheese stack on scale to test accuracy of automatic weigher. Stops machine to clear blockage. Records production data.

May direct other workers engaged in packaging or checking weight of cheese output. May tend machine which automatically extrudes process cheese into moulds to form individual slices or blocks of specified size and weight and be designated accordingly, Cheese-Extruder Tender

8223-218 CHEESE CUTTER(dairy) DPT:584
GED: 2 SVP: 3 EC: I PA: M 4 7

Cuts blocks of cheese into pieces of specified shape and size:

Examines cheese for defects in colour, texture and body. Trims rind, mould or sediment from cheese, using knife. Bolts specified cutting head to machine, adjusts stops on cutting table and turns wheels to position cutting wires. Places block of cheese on table, and moves lever to lower cutting head or raise table to cut cheese. Weighs cheese cut and records weight. Places pieces on conveyor leading to packaging or processing areas. Measures cheese cuts with ruler, and adjusts cutting wires to prevent wastage.

May direct other workers engaged in packing, weighing and labelling cheese cuts. May send samples for laboratory analysis.

8223-222 GRATED-CHEESE MAKER(dairy) DPT:685
cheese grater.
GED: 2 SVP: 3 EC: I 5 7 PA: M 4 7

Tends grating machine and drying and cooling equipment to make grated cheese:

Sets controls to start grater, drying drums or drying chamber heater, blowers and cooling cones. Dumps cheese blocks into feed box of grater, and actuates ram that pushes cheese against grating wheel. Tests moisture content of grated cheese, using moisture meter, and adjusts conveyor speed or hot-air flow into dryer to attain specified moisture content. Observes temperature gauges and reports deviations from specifications. Removes full containers of grated cheese, using hand or power truck.

May tend blender to mix grated cheese with milk powder.

8223-226 CHEESE-FACTORY WORKER(dairy) DPT:686
GED: 2 SVP: 2 EC: I 2 4 7 PA: H 3 4

Prepares curd and forms cheese, as directed, performing any combination of the following duties:

Divides curd into portions using knife, cutter or scoop to release whey. Inserts strainer into vat outlet and assembles piping or hose. Opens drain valve and banks curd to side of vat with hands or rake to drain off residual whey, and mat curd. Cuts matted curd into standard slabs, and piles and turns slabs over periodically as directed, to obtain specified acidity and moisture. Feeds slabs into mill to cut curd into cubes, and salts cubes. Scoops cubes into forms in press to remove whey and to shape cheese. Places cheese on various shelf levels, as directed, in temperature controlled or smoke-filled room for curing. Cuts cheese blocks into equal portions, using cutter or knife, and places pieces of cheese on truck. Weighs batch to obtain specified amounts of various kinds of cheese required for each cook. Dumps batch of cheese into machine that grinds cheese preparatory to processing. Stamps identification data on cheese. Wraps cheese in foil or other material and places it in wooden or cardboard boxes. Washes moulds, vats and other process equipment.

May stretch matted curd in hot water, using paddle. May cut, weigh and mould elastic curd, as directed, using hands, to make specialty cheese.

8225-SUGAR PROCESSING AND RELATED OCCUPATIONS

This unit group includes occupations concerned with extracting, refining and processing sugar, molasses and sugar by-products from materials such as raw-cane sugar, sugar beets and corn. Includes activities such as operating diffusers, mixers, filters, evaporators, driers, presses and screening devices. Occupations concerned with processing maple sugar products are classified in Minor Group 718/719, OTHER FARMING, HORTICULTURAL AND ANIMAL HUSBANDRY OCCUPATIONS.

8225-110 CORN-SUGAR-REFINERY OPERATOR(sugar) DPT:382

GED: 3 SVP: 5 EC: I 6 PA: L 4

Controls semi-automatic refinery equipment to produce sugar from corn starch:

Actuates switches and valves to pump and control flow of materials through clarifiers, converters, decolorizers, evaporators and ion exchangers. Observes dials, meters and gauges of console, to determine progress or state of process and to detect equipment malfunction. Actuates controls to regulate treating time, temperature, rate of flow and density of sugar liquors flowing through filter, converter and evaporator units, according to specification. Takes samples of solution and forwards to laboratory for determination of specific gravity and acid content, and to ensure filtering is adequate. Adds base or acid to solution as indicated by laboratory report, and checks result, using pH meter. Compiles reports and records processing and other production data.

8225-114 CARBONATION MAN(sugar) DPT:582

GED: 3 SVP: 5 EC: I PA: L 4 7

Controls equipment to purify and bleach sugar solutions:

Turns valves and starts pumps, from control panel, to transfer sugar-beet-juice solution to carbonation tanks, for purification and bleaching. Actuates controls to admit specified amounts of lime solutions and carbon-dioxide gas, to clarify solution by precipitating impurities to bottom of settling tank. Turns valves to regulate flow of sulphur-dioxide gas, to stabilize and prevent darkening of solution. Takes samples from carbonation tanks and filters, and tests for alkalinity, using pH meter and dilute hydrochloric acid and phenolphthalein. Records results of tests.

8225-118 DIFFUSER OPERATOR(sugar) DPT:482

GED: 3 SVP: 4 EC: I 5 PA: L 4

Controls automatic multicell diffuser to extract sugar juice from beet slices:

Turns controls and presses switches on control panel to start diffuser and auxiliary equipment such as beet slicers, conveyors and automatic weighing scales. Observes indicators and operates controls to regulate flow of beets into diffuser, speed of agitators and temperature of liquid in cells. Determines sugar content of beets from laboratory report and adjusts controls to obtain maximum amount of sugar juice. Examines diffuser cells to ascertain that screens are clear and that liquid levels are maintained at specified height. Reads control panel meters and automatic indicators and records operating data such as tonnage of beets sliced and diffused and estimates volume of water required to diffuse beet slices.

8225-122 LIQUID-SUGAR OPERATOR(sugar) DPT:482

GED: 3 SVP: 4 EC: I 4 PA: L 4 7

Controls equipment to process liquid sucrose and to convert it into liquid invert sugar:

Opens valves and starts pumps to move specified amounts of sucrose through processing equipment such as condensers, heat exchangers and tanks. Tests density of liquid sugar, using hydrometer, and adjusts sugar concentration by adding water. Inverts specified portion of liquid sucrose, to prevent crystallization during shipment, by pumping sucrose into inverter, using variable-output pump to control inversion time, and by adding hydrochloric acid. Adds sodium-hydroxide solution to halt inversion process. Monitors temperature, density and pH of product during and after inversion process. Connects delivery lines and opens valves to transfer liquid sucrose and liquid-invert

sugar to tank cars, tank trucks and drums, to meet orders. Measures depth of product in tank car or truck, reads conversion tables to determine amount shipped and records amounts on production slips. May prepare hydrochloric acid and sodium hydroxide solutions.

8225-126 SUGAR BOILER(sugar) DPT:582

GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Controls vacuum pans (boilers) to concentrate sugar liquor and grow sugar crystals of specified size:

Operates manual or panel-mounted controls to close vacuum seals on pans, start vacuum pump, fill pans with specified amount of sugar liquor and admit steam to heating units. Observes boiling process through peep window and adjusts steam valves to maintain specified temperature. Opens valve to admit powdered sugar to start formation of crystals. Examines sample of sugar crystals, using magnifier to determine grain size. Adjusts flow of liquor to control growth of crystals. Breaks vacuum seal and shuts off steam to stop boiling, when specified concentration and size of sugar crystals is achieved. Opens gate or valve in pan to dump contents into holding or mixing tanks. Washes and steams heating coils and pans to remove sugar deposits. Records production data such as time started, graining time and amount of liquor used.

May be designated by type of liquor boiled or by process; for example,

High-Raw-Sugar Boiler
Remelt-Sugar Boiler
Soft-Sugar Boiler
White-Sugar Boiler

8225-130 CORN-SUGAR-CRYSTALLIZER OPERATOR(sugar) DPT:682

GED: 3 SVP: 4 EC: I 6 PA: M 4

Controls cooling, crystallizing, centrifuging and washing equipment, to cool liquid corn-sugar, to form sugar crystals, to separate sugar from residue, and wash sugar liquor from sugar crystals:

Turns valves and starts pumps to fill cooling tank (s) with liquid sugar and regulate flow of cold water through cooling coils, until specified temperature is reached. Pushes lever to open door of crystallizer and adds dextrose-crystal-seeding mixture to liquid sugar. Monitors crystallization process and removes sugar plug to admit sugar-crystal mass into centrifuge. Actuates controls to start centrifuge and separate liquid from sugar-crystal mass. Moves lever to open centrifuge gate and drop crystallized sugar to washing-tank conveyor. Presses control to start flow of water over crystals, to remove sugar liquor. Allows water to drain off and starts conveyor to move washed sugar mass to storage tank.

8225-134 CORN-SUGAR-FILTER OPERATOR(sugar) DPT:682

GED: 3 SVP: 4 EC: I 6 PA: L 4

Controls filter presses and rotary-vacuum and pressure-leaf filters used to remove impurities from corn-sugar solutions:

Turns valves to control flow of solution through filters, following charts and formulas. Observes liquid sugar flowing through filters to detect cloudiness, consistency of liquid, and streaks caused by presence of acid. Observes gauges to detect any increase in pressure, indicating need to clean filters. Starts pumps and agitators that transfer filtrate into tank and recirculate it, or pumps filtered solution into evaporation tank, for further processing.

May open valves to admit sodium carbonate solution, to neutralize acid. May open and clean filters, using steam hose.

8225-136 KNIFE SETTER(sugar) DPT:664

GED: 3 SVP: 4 EC: I 6 PA: M 4 5 6

Fits and secures knives on mounting block assemblies and installs blocks in beet-slicing machines:

Positions knives on block, aligns knives with cutter bar, using gauge, and secures knives in place on block, using hand tools. Places assembled block on cutter wheel and secures it in place, using hand tools. Orders machine replacement parts from company stores as required. Instructs helper in disassembly procedure and assigns duties such as obtaining parts and cleaning and servicing machines.

8225-138 LIQUOR-GALLERY TENDER(sugar) DPT:565
liquor-bridge operator; liquor runner.
 GED: 3 SVP: 4 EC: I 4 PA: L 4 5 6 7

Tends equipment to regulate and distribute flow of sugar liquor and sweet water (sugar solution) from char filters to storage tanks:
 Opens char-filter-discharge valves and operates controls to start pumps to pump sugar solutions into specified storage tank. Positions weir-box (distributor) under filter-discharge pipe and weir-box outlet over gutter leading to storage tanks. Adjusts weir-box gate to regulate flow and maintain pressure on filter. Repositions weir-box to alter liquor and sweet water distribution as indicated by production schedules or as advised by laboratory personnel, or shift foreman. Tests density of sweet waters to determine sugar content, using Brix-scale hydrometer. Opens valves to regulate flow of soft-liquor by-pass, to attain specified colour and purity of brown-sugar liquor. Takes samples of liquor and sweet water for laboratory analysis. Observes signal panel to ensure correct functioning of system. Directs filter worker to introduce liquor, water or air to filter as per operating schedule or as directed by laboratory personnel. Records filter usage and settling times and prepares daily summary sheets.

8225-142 MELTER TENDER(sugar) DPT:585
 GED: 3 SVP: 4 EC: I 3 4 PA: L 4

Tends heating and mixing equipment that melts impure crystallized sugar in molasses mixture and softens molasses adhering to sugar crystals:
 Starts pumps, turns valves to start flow of molasses and starts conveyors or opens chute that dumps sugar crystals into melting tanks. Regulates steam valves to maintain specified temperature and starts agitators. Reads recording devices such as meters, dials and graphs, and sets controls to maintain mixture at specified temperature and density. Tests mixture for alkalinity, using pH meter, and for sugar content, using Brix-scale hydrometer. Actuates controls to pump melt to char house for filtration. Records data such as temperature, specific gravity and alkalinity, on report form.
 May add milk of lime to mixture to obtain specified alkalinity. May clean pump screens with hose and water.

8225-146 CRYSTALLIZER TENDER(sugar) DPT:685
 GED: 3 SVP: 4 EC: I 5 PA: L 4 6

Tends crystallizer tanks and agitators that mix crystallized sugar and hot sugar liquor to prevent solidification and allow sugar crystals to grow during cooling process:
 Opens valves, to allow sugar mixture to flow into mixing tanks. Starts agitators and turns valves to control temperature and ensure cooling at controlled rate. Stops machine when specified crystallization is obtained and drains off mixture of sugar crystals and liquor. Steams crystallizers to remove and recover hard sugar adhering to agitators, tank sides and piping.
 May record data such as temperature readings and disposition of batches.

8225-150 FIREMAN, CHAR-KILN(food & bev., n.e.c.; sugar) DPT:585
char revivifier; multiple-hearth-kiln tender.
 GED: 3 SVP: 3 EC: I 3 5 7 PA: L 4

Tends kilns that reactivate char used to filter sugar liquor or corn syrups:
 Actuates panel controls to ignite furnaces and adjusts fuel and air supply to regulate kiln temperatures. Starts conveyors to feed contaminated char through kilns that burn off impurities, and to transfer reclaimed char to coolers. Adjusts controls to regulate char feed rates. Monitors recorders, instruments and fault alarm systems and takes corrective measures. Takes samples of reclaimed char for laboratory analysis. Records data such as temperature and amount of char processed. Replaces chart paper in recording devices.
 May wash spent char with acid or alkaline solution before reactivating process.

8225-152 STARCH CONVERTER(sugar) DPT:585
 GED: 3 SVP: 3 EC: I 5 7 PA: L 4 6

Tends equipment used to change starch into glucose products:
 Turns valves to admit steam and water into converter. Starts pump to transfer starch slurry into converter so that starch mixture begins to cook on entering vessel. Listens to detect sound of formation of paste during cooking process. Injects steam or adds acid to vessel, as specified, to give mixture required viscosity. Collects and sends samples of mixture to laboratory for analysis. Turns valves to pump product to storage tank when test results indicate conversion is complete. Records production-control data.
 May perform standard iodine and alcohol titration tests.

8225-154 CENTRIFUGAL-STATION TENDER, AUTOMATIC (sugar) DPT:685
 GED: 3 SVP: 3 EC: I 5 PA: L 4

Tends battery of automatic batch type recycling centrifuges from control panel, to separate sugar crystals from syrup:
 Actuates controls on panel to start centrifuges and regulate flow of mixture of sugar crystals and syrup. Observes panel lights, meters and continuous recorders, and adjusts controls to maintain specified temperatures and pressures, and cycling and recycling operations. Observes progress of mixture through loading, washing, spin-drying and dumping processes to detect faulty operation of equipment. Records operational data. Cleans and washes work area and machines.

8225-158 CLARIFYING-EQUIPMENT TENDER(sugar) DPT:685
blow-up man.
 GED: 3 SVP: 3 EC: I 4 PA: M 4 5 7

Tends clarifiers to remove impurities from raw-sugar liquor:
 Actuates controls on panel to open valves that control flow of raw-sugar liquor to clarifiers or blow-up tanks, in preparation for char-filtering process. Admits steam to maintain liquor at specified temperature and admits air under pressure to agitate solutions in tanks. Adds diatomaceous earth, lime and phosphoric acid, as specified for clarification process. Observes panel meters and recording charts to ensure correct functioning of system. Tests pH of liquor and adjusts to specified level by regulating flow of lime solution or phosphoric acid, as indicated. Takes and inspects samples of liquor for clarity and performs tests, using centrifuge.
 May prepare lime solutions by dumping bags of lime into mixer, adding water and testing solution, using hydrometer.

8225-162 PULP-DRIER FIREMAN(sugar) DPT:685
pulp furnaceman.
 GED: 3 SVP: 3 EC: I 5 PA: L 4

Tends drum type rotary kilns that remove moisture, from beet pulp and molasses mixture, used for animal feed:
 Starts oil or gas fired kilns and sets control to obtain specified temperature. Starts and sets scroll or conveyor speed, to transport pulp to kiln. Feels dried pulp to check on moisture content. Starts conveyor to move dried pulp to packing house or to station for further processing. Keeps records related to machine operation such as stoppages and down time. Monitors automatic weighing device, thermometers and humidity indicators, and makes adjustments to machines when necessary. Changes charts in automatic weigher at end of shift.

8225-166 SOFT-SUGAR MAKER(sugar) DPT:685
brown-sugar maker.
 GED: 3 SVP: 3 EC: I 5 PA: M 4 7

Tends centrifuging equipment that separates brown-sugar crystals from syrup and screening equipment that sifts brown sugar prior to packaging:
 Turns dials on panel board to set spinning, washing and steam cycles on automatic centrifuges, and resets cycles as required to make brown sugar of specified colour and quality. Turns valves to regulate syrup temperature. Actuates panel controls to start screening machines, and conveyors to move sugar to storage bins or packaging stations.
 May direct packaging workers. May prepare production records and reports.

8225-170 CHAR-FILTER TENDER(sugar) DPT:565
dry-char man; filter-top operator.
 GED: 2 SVP: 3 EC: I 3 PA: M 3 4

Tends char filters used to remove impurities from sugar or corn-syrup solutions:
 Opens filter, using hoist and wrenches and directs bone-char filtering material from conveyor into filter. Opens valve to admit previously filtered sugar or corn-syrup solutions, to settle char. Closes filter, connects supply lines and opens valves to start flow of solutions. Monitors filter operation and performs such tasks as bleeding air from filter system, disassembling filter to rake filter surfaces, washing filters with water, clearing obstructions with air under pressure, and removing spent char. Notifies other filter tenders, when changing filter hookups, to ensure flow of specified solutions. Keeps records such as filter operating and char replacement times.
 May adjust pH of solutions by shovelling small amounts of lime or magnesia granules into filter. May direct helper(s) to assist in some of the tasks described.

8225-174 GRANULATOR TENDER(sugar) DPT:585
sugar drier.
 GED: 2 SVP: 3 EC: I PA: L 4

Tends granulators (rotary kilns) that dry refined sugar to specified moisture content:
 Sets temperature controls, starts blowers and adjusts draft control to regulate flow of hot air through granulators. Starts conveyors to move wet sugar from storage bins into granulator and to transfer dried sugar to screening area. Monitors process by observing temperature and airflow instruments and by feeling sugar on conveyor to judge moisture content. Makes adjustments to control drying. Records granulator temperatures and other process data.

8225-178 BEET-PULP-PRESS TENDER(sugar) DPT:685
pulp-press man.
 GED: 2 SVP: 3 EC: I PA: L 4

Tends presses and auxiliary equipment that extracts water from sugar-beet pulp and mixes in molasses for further processing into animal fodder:
 Actuates starting mechanism to start conveyors, scrolls and presses. Opens valve to admit molasses into scroll carrying beet pulp. Adjusts presses and valves to obtain pulp and molasses mixture with specified moisture content. Takes pulp samples and forwards to laboratory for analysis.
 May tend presses that form beet pulp mixture into animal fodder pellets.

8225-182 CENTRIFUGAL TENDER(sugar) DPT:685
 GED: 2 SVP: 3 EC: I 5 PA: M 4

Tends centrifugal machines to separate mother liquor, syrup and molasses from sugar crystals:
 Opens gate to allow sugar mass to flow from crystallizer, vacuum pan or holding vat into centrifuge basket. Starts centrifuge to spin off mother liquor, wash away molasses and spin out washwater. Lifts plate covering bottom of basket, positions cutting arm over sugar, and starts machine to cut and remove crystals from inside basket. Washes centrifuge using hose.
 May be designated as to specific process, or product; for example, Intermediate-Centrifugal Tender
 Low-Raw-Sugar Cutter
 Scum Desweetener
 White-Sugar-Centrifugal Tender

8225-186 CORN-SUGAR-SYRUP COOLER AND DECOLOURIZER(sugar) DPT:685
 GED: 2 SVP: 3 EC: I 6 PA: L 4

Tends equipment to cool, decolorize and transfer corn-sugar syrup to storage tanks:
 Observes thermometer on control panel and turns valves to regulate flow of cold water through cooling coils, and to start flow of syrup over coils. Starts pump to transfer cooled syrup to decolorization tank. Actuates controls to inject specified quantities of bone char and vegetable carbon to decolorize syrup. Observes mixing and decolorizing process and after specified time, starts pump to transfer decolorized syrup to storage tanks.

8225-190 POLISHING-FILTER TENDER(sugar) DPT:685
 GED: 2 SVP: 3 EC: I 6 PA: L 4

Controls equipment to decolorize and polish (refine) liquid sugar and raw sugar liquors:
 Prepares polishing filter for use, by filling hopper with filter materials and circulating slurry through filter. Opens valves to control flow of sugar solutions to filter. Monitors filtering operation by observing dials and charts on control panel. Sends samples of filtered-sugar solutions to laboratory for testing. Diverts flow of sugar solutions from one filter to another, on direction from laboratory. Prepares filters for reuse by flushing with water to desweeten and remove impurities, or may remove impurities by using specified chemical processes.
 May operate equipment that dissolves sugar in water to provide liquid-sugar solutions for filtering. May test concentration of sugar in solutions, using Brix-scale hydrometer. May be classified according to type of filter operated.

8225-192 GLUCOSE-TRANSFER MAN(sugar) DPT:585
 GED: 2 SVP: 2 EC: I 6 PA: VH 4

Tends equipment to transfer finished glucose from processing equipment to cooling and storage tanks, and fills drums or vehicles preparatory to shipment:
 Turns valves to admit water to cooling coils and transfer glucose from production area to cooling vats and storage tanks. Starts pump to transfer glucose from storage tanks to fill tank cars or tank trucks. Rolls empty drums to filling rack, inspects interiors for cleanliness, and turns spigot to fill drums with glucose. Replaces caps and seals drums using wrench. Weighs filled drums and stencils tare, net and gross weights on drum. Obtains samples of glucose for laboratory analysis. Positions hand truck under full drums and removes to storage or shipping area. Records production data and batch-control numbers.
 May tend vat equipped with agitator to stir fluid thoroughly prior to transfer to storage tanks.

8225-194 TANKMAN(sugar) DPT:585
 GED: 2 SVP: 2 EC: I 3 4 PA: L 4

Tends equipment that distributes syrups, molasses, sludges and sweetwaters to processing stations or into storage tanks:
 Starts pumps and opens valves to move liquids to specified processing stations or storage tanks. Sets automatic controls to regulate steam pressure and air in tanks and to maintain solution at specified temperature and density. Records data concerning purity, density and routing of solutions. Drains and cleans lines and screen pots to prevent caking, or crystal formation, and to prevent contamination of solutions. Takes samples of solutions for laboratory analysis.
 May test alkalinity of solution and add milk of lime to maintain specified alkalinity.

8225-198 BEET WASHER(sugar) DPT:665
 GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends sugar-beet washers and associated conveying equipment:
 Starts conveyors and washing equipment and opens valves to allow water to flow through washing vat. Signals other worker(s) to adjust flow of beets, using telephone or signalling device. Observes operation of equipment to prevent stoppages. Opens valves to drain water from washing vats. Cleans debris from washing vat, using water hose. Directs other worker(s) in operation of conveyors and in cleaning premises and washing machines.

8225-202 FLUMER(sugar) DPT:665
wet-hopper tender.
 GED: 2 SVP: 2 EC: O PA: L 4 6

Maintains specified supply of sugar beets to refinery, by regulating flow of water in flumes which carry beets:
 Operates control to raise gate of storage bin or railway car to admit beets to flume leading to beet washroom. Adjusts water valves to increase or decrease flow of water in flume, in response to telephone, or visual or bell signal. Flushes sugar beets from railway cars, using hose.

8225-206 CUBE-MACHINE TENDER(sugar) DPT:685
cube-drum operator.
 GED: 2 SVP: 2 EC: I PA: H 4

Tends equipment to form sugar cubes:

Actuates controls to start cube-forming press, drying oven and conveyor. Starts flow of moist sugar to cube press to form cubes of specified weight and dryness. Examines and weighs samplings of cubes to determine moisture content, hardness and shape. Adjusts oven-temperature controls to ensure cubes are produced to specification. Cleans work area and equipment using broom, shovel, water hose and wipers.

May operate mixer to blend sugar and water to consistency specified for cube press.

8225-210 ICING-SUGAR-MILL TENDER(sugar) DPT:685
powder-mill operator.
 GED: 2 SVP: 2 EC: I 7 PA: H 4 6 7

Tends powder-mill pulverizer that grinds granular sugar and mixes in corn starch to produce icing sugar:

Starts conveyors, exhaust fans, dust collectors and humidifying equipment, to prepare station for operation. Fills hopper with corn starch, manually or using hoist. Actuates valves to admit and regulate flow of granular sugar and corn starch into pulverizer. Observes dials, gauges and machine operation, to detect overheating, overloading and stoppages. Clears hopper and conveyor blockages. Forwards samples of icing sugar to laboratory for analysis.

8225-214 MINGLER TENDER(sugar) DPT:685
melt-house-utility man; mingling-scroll operator.
 GED: 2 SVP: 2 EC: I PA: L 2 4

Tends mingler machine that produces magma by reliquifying dried syrup coating adhering to raw sugar crystals:

Opens louvers to admit raw-sugar into mingling trough fitted with rotating spiral mixer and opens valve to add sugar liquor. Observes solution in mingler during mixing and regulates flow of sugar or liquor to ensure correct level and density of magma is maintained. Washes and cleans equipment to prevent build up of sugar crystals.

May record cumulative production weight taken from counter on weighing scale. May add specified chemicals, such as lime to the magma, to maintain required pH level.

8225-218 SCREENING-MACHINE TENDER(sugar) DPT:685
 GED: 2 SVP: 2 EC: I 7 PA: L 2 7

Tends machines that separate sugar crystals according to grain size:

Verifies process information on control board and selects appropriate screens to ensure correct grain size. Starts machines and observes vibrating screens to ensure that sugar is flowing. Cleans screens with brush and alters screen vibration rate to increase or decrease sugar flow. Changes screens, as dictated by production order, to provide for specified degree of sugar coarseness, by disconnecting sleeves, removing wing nuts, and hoisting cover, using hoist. Takes samples of processed sugar for laboratory analysis. Observes and listens to machine operation, and alerts mechanics when repair or adjustment is indicated.

May direct other workers to clean or change screens. May adjust hopper gates, conveyors and feed scrolls, to control distribution of sugar to bulk storage, transportation and packaging stations.

8225-222 SUGAR-CHIPPER-MACHINE TENDER(sugar) DPT:685
 GED: 2 SVP: 2 EC: I 6 PA: M 4

Tends chipping machine to reduce corn-sugar cakes into pieces suitable for further processing or packaging:

Removes corn sugar cakes from conveyor and places them on table of chipping machine. Starts machine and pushes cake over rotating drum equipped with cutting knives which chip or cut surface of cake to produce sugar pieces of specified size. Observes operation and switches off machine to clear stoppages or make adjustments. Cleans equipment and work area using cleaning utensils, cleaning materials and hose.

8225-226 SUGAR GRINDER(sugar) DPT:685
powdered-sugar-pulverizer tender.
 GED: 2 SVP: 2 EC: I 5 PA: H 4

Tends machine that grinds granulated sugar to produce powdered sugar:

Adjusts mechanism to set spacing between grinding rollers or stones, or installs gratings in drum of grinding machine to obtain powdered sugar of specified texture. Empties bags of granulated sugar into machine hopper and starts machine. Observes grinding and discharging process to verify powdered sugar is of specified texture and discharging and bagging mechanism of machine is functioning correctly. Removes filled bags from machine and secures empty bags to machine bagging device. Lubricates machine, using grease gun and oil can.

May weigh bags of powdered sugar.

8225-230 SUGAR PRESSER(sugar) DPT:685
 GED: 2 SVP: 2 EC: I PA: M 4

Tends press that removes corn-sugar hydrol from crystallized cakes of sugar:

Places sugar cakes in press and turns handwheel or actuates control to compress cakes and squeeze out hydrol. Releases pressure and removes slabs of sugar. Replaces filters used to remove impurities from hydrol, using hand tools. Washes and cleans equipment and working area, using mops, rags and water hose.

8225-234 LIQUOR-GALLERY-TENDER HELPER(sugar) DPT:687
 GED: 2 SVP: 2 EC: I 4 PA: M 4

Helps to regulate flow of sugar solutions to and from char filters:

Prepares filter-record board, showing filters to be filled with liquor. Ties clean pocket-shaped device to filter discharge pipes to prevent splashing in weir boxes. Changes weir boxes to divert flow of sweetwater (sugar solution) to specified tanks and shows change on filter-record board. Tests density of solutions to determine sugar content, using Brix-scale hydrometer. Bottles liquor and sweetwater samples for laboratory analysis. Washes weir boxes and keeps work station clean, using cleaning materials and tools. See also definition for term title, 02-160 HELPER (any ind.).

8225-238 CHAR-FILTER-TENDER HELPER(sugar) DPT:687
filter-top-operator helper.
 GED: 2 SVP: 2 EC: I PA: M 3 4

Helps to prepare and tend char filters used to remove impurities from sugar or corn syrup solutions:

Attaches hoses between sugar-solution manifold and filters, using wrenches. Slides filter covers aside, or removes covers using hoist. Positions char chutes and starts conveyors to fill empty filters with bone char. Admits previously filtered solutions to settle char, by attaching hose from manifold to weir boxes (distributors) or by connecting hose from holding tanks to filter. Replaces filter cover and opens air valves to vent filter. Bags and weighs char, and transports it to storage area, using hand truck. Keeps work area and equipment clean. See also definition for term title, 02-160 HELPER (any ind.).

8226-INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FOOD BEVERAGE AND RELATED PROCESSING

This unit group includes occupations in inspecting, testing, grading and sampling work, as described under the term titles 02- 170 INSPECTOR (any ind.), 02-430 TESTER (any ind.), 02-150 GRADER (any ind.), and 02-330 SAMPLER (any ind.), concerned with quality- control activities in food and beverage processing. Occupations concerned with inspecting drugs are classified in Unit Group 8296, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PROCESSING, N.E.C.

Food Inspecting, Testing, Grading and Sampling Occupations

8226-110 through 8226-174

8226-110 FOOD TESTER(any ind.) DPT:481
GED: 4 SVP: 6 EC: I PA: L 4 7

Performs standard tests on food ingredients and products to determine quantitative and qualitative physical and chemical properties to ensure compliance with control standards, using laboratory equipment:

Tests food products and food specialties and their preservatives for such properties as acidity, alkalinity, salt or fat content, non-fat solids, sediment, solubility or other chemical or nutritional factors, using centrifuge, incubator, autoclave, ovens, torsion balance, cryoscope, refractometer and sediment pump or other laboratory equipment. Tests samples to ensure compliance with standards, using pH meter, distillation equipment and scales. Refers to prepared tables, or computes, by formula, such factors as moisture, salt content, sediment or solubility. Compares test results with standards and records results. Smells samples for odours, tastes for prescribed flavour, or examines for discoloration. Observes sample smear of product, sediment disk or agar sample through microscope or magnifying glass to identify bacteria and count bacterial colonies. Mixes ingredients to make reagents, using blender. Calculates or computes percentages of ingredients in finished product, using calculating machine or slide rule. May test particular product and be designated accordingly; for example,

Laboratory Technician(confection.)
Laboratory Tester(fish process.)
Quality-Control Technician(dairy)

8226-114 TEST BAKER(bake. prod.; feed & flour mill.) DPT:681
cake tester.
GED: 4 SVP: 6 EC: I PA: L 4 7

Bakes test loaves of bread or cakes to ensure conformity of flour blends with specifications, or to prove acceptability of cake mixes and bakery products:

Selects samples of flour or cake mix according to purpose of test. Weighs out and mixes ingredients according to formula, to make batches of dough or batter. Records mixing formula used and observes characteristics, such as water absorption, kneading and raising qualities of each batch of dough, to ensure that materials conform to specifications. Bakes test loaves or cakes in oven. Examines baked product for colour, smell, taste, texture and density, and compares product against weight and volume standard. Records test data on work sheet and prepares reports, or notifies supervisor when batch does not conform with specifications. May test competitors' products, experimental mixtures and products returned by consumers.

8226-118 GRADER, MEAT(slaught. & meat pack.) DPT:687
GED: 3 SVP: 6 EC: I 4 5 PA: M 4 7

Grades dressed animal carcasses to determine value and quality of meat:

Examines rows of suspended carcasses to determine grade based on age, sex, build, conformation, thickness of meat, quantity and distribution of fat, colour, texture and marbling of lean meat. Attaches tag identifying grade of carcass according to established standards.

May weigh carcass using manual or automatic recording scale. May record weights in register. May be designated according to carcass graded; for example,
Beef Grader
Calf Grader
Hog Grader

8226-122 QUALITY-CONTROL INSPECTOR(can. & preserv., n.e.c.; food & bev., n.e.c.) DPT:681
inspector; process-control checker.
GED: 3 SVP: 5 EC: I PA: L 4 7

Inspects and tests raw materials and finished food products, and tests and adjusts food packaging equipment during processing of products: Examines raw materials for cleanliness, signs of deterioration and moisture content. Inspects finished products; such as, corn chips, potato chips, cheese puffs, fish or prepared breakfast foods for conformance to standards. Determines colour and oil, salt, sugar and moisture content of raw materials and finished products, using devices; such as, colour charts, thermometer, hydrometer, oven, pan

balance, hydraulic press, conductivity tester and standard containers. Places standard weights on balance mechanism of packaging machine to determine accuracy, and adjusts regulating mechanism as required, using hand tools. Examines sealed packages for appearance and quality. Records inspection data and writes reports of irregularities. Verifies cleanliness of equipment and work place.

May taste product for flavour, texture and general acceptability. May inspect particular food or product and be designated accordingly; for example,

Corn-Chip Inspector(food & bev., n.e.c.)
Potato-Chip Inspector(food & bev., n.e.c.)
Potato Inspector(food & bev., n.e.c.)

8226-126 GRADER, FRUIT-AND-VEGETABLES(can. & preserv., n.e.c.) DPT:687
produce sampler.
GED: 3 SVP: 5 EC: B PA: L 2 4 7

Examines and grades fruit and vegetables on receipt at processing plant:

Removes samples of fruit or vegetables at random from truck and compares against company specifications to determine grade of load. Issues grade ticket or receipt for load, or rejects loads not meeting company specifications.

May weigh samples of produce and containers, and calculate net weight and tare of shipment. May sort samples of fruit and vegetables by grade and size, and calculate percentage of each size and grade in total load. May size and test fruit for maturity, using hand rings and pressure gun to break flesh of fruit.

8226-130 SUGAR TESTER(sugar) DPT:681
GED: 3 SVP: 4 EC: I 7 PA: M 4 7

Tests samples of sugar to determine physical and chemical properties during refining, to ensure compliance with quality standards, by performing routine production tests:

Deposits samples of sugar into containers of pH meter and refractometer, and reads instruments' scales to determine acidity and density of samples. Titrates samples to test for presence of invert sugars. Determines starch content of icing sugar, using polariscope or by weighing and filtering sample. Separates sugar by segregating granules of different sizes, using vibrating screens and weighing each lot of granules to determine conformity to specifications. Examines dissolved sugar samples for colour and turbidity. Records results of each test. May weigh filled containers off production line to ensure that contents conform to weight specifications.

8226-134 HONEY GRADER AND BLENDER(food & bev., n.e.c.) DPT:664
GED: 3 SVP: 4 EC: I PA: L 4 5 7

Grades honey according to type, colour, bouquet and moisture content, and blends various grades to obtain uniform product:

Compares samples of liquid-honey lots with standard samples for colour and bouquet, and ascertains moisture content, using refractometer. Calculates quantities of various types of honey required to produce product of uniform colour, clarity and bouquet. Directs blending of various honey lots in warming chamber. Grades honey according to government regulations and marks grade on containers.

8226-138 GRAIN INSPECTOR(feed & flour mill.) DPT:687
grain tester.
GED: 3 SVP: 4 EC: I 6 PA: L 4 7

Separates, weighs and grades samples of grain prior to processing:

Pours grain into hopper of sample divider and removes and weighs specific amount of grain to obtain representative sample. Removes foreign matter from sample, using cleaning mill or sieve. Examines and smells sample to detect damage from excessive heat or moisture and to determine if grain is sour or musty. Computes weight of bushel of grain by weighing sample in standard measure and reading conversion chart. Separates damaged and under-developed grain from sound grain and places in separate containers. Grades weighed samples by comparing with standard samples of grain.

May test samples from incoming grain shipments, using standard procedures and reject unsatisfactory grain. May obtain representative samples of stored grain and confirm quality and grade prior to shipment.

8226-142 CHEESE GRADER(dairy) DPT:687
GED: 2 SVP: 4 EC: 1 PA: M 4 7

Evaluates and determines grade of cheese:
Pushes plunger into cheese to obtain sample. Smells cheese for odour and tastes for acidity and flavour. Feels cheese to determine firmness and texture. Examines cheese, visually, for colour, shape, size, finish and surface blemishes. Records weight, grade and identifying data.
May buy cheese or assist in other phases of processing or storage.

8226-146 KOSHER INSPECTOR(dairy; food & bev., n.e.c.;
slaught. & meat pack.) DPT:687
mashgiach.
GED: 3 SVP: 2 EC: B PA: L 7

Observes milking and slaughtering of cattle, and examines meats, feed and other ingredients, to ensure that collection, storage, preparation, processing, sale and use, comply with Jewish dietary laws:
Examines food, such as meats, milk, vegetables, ice cream, oils, jams, candies and baked food, used by Jewish caterers, to ensure it is kosher, and that Jewish dietary laws are complied with in preparation and serving of food. Observes milking and slaughtering of cattle, calves and sheep and examines meat to ensure it is kosher.

8226-150 TENDEROMETER TENDER(can. & preserv., n.e.c.) DPT:485
tenderometer operator.
GED: 2 SVP: 3 EC: O PA: L 4

Tests peas for tenderness to determine processing procedure and payment to grower:

Takes specified number of samples of shelled peas which are representative of truckload from conveyor, using handscoop. Shakes first sample in pan to remove unwanted material. Dumps cleaned peas onto grid of tenderometer (dynamometer device) and closes cover. Starts device and notes force required to mash peas as registered on dial. Cleans and tests each of remaining samples, and records dial readings. Computes average force required from series of tests to determine quality of truck load of peas. Records computations in log book.

8226-154 COOKIE AND CRACKER TESTER(bake. prod.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tests cookies and crackers for conformance to standards:
Obtains random packages of cookies or crackers from conveyor line. Weighs and records weight of contents of packages, to verify specifications. Adds crumbled crackers to chemical solution and determines level of acidity or alkalinity, using pH meter or compares colour of solution with colour chart. Places weighed and crumbled contents in drier and turns on drying unit for specified time to remove moisture. Weighs dried crumbs to ascertain moisture content. Records test results and reports variations from standard.

8226-158 GRADER, FISH(fish process.) DPT:687
fish culler.
GED: 2 SVP: 3 EC: 1 2 4 7 PA: M 4

Examines, classifies, and separates fish according to size, species and quality at receiving station or on conveyor line:
Observes cleaned fish passing on conveyor for bruises, unremoved fins or other defects. Removes and places culls, or fish of different species, on separate conveyors or into designated containers for further cleaning and washing or separate processing.
May weigh fish.

8226-160 GRADER, SLICED BACON(slaught. & meat pack.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Sorts sliced bacon into various grades and slides bacon slices onto cards prior to weighing and wrapping:
Places appropriate brand cards at end of conveyor leading from slicing machine. Slides estimated amount of slices required for package off conveyor and onto card, using hand span as guide. Selects and places slices on specified card according to grade, as determined

by cut of bacon. Places cards of sliced bacon on conveyor leading to scales.
May tend bacon-slicing machine.

8226-162 CANDY INSPECTOR(confection.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects candy to ensure conformity with manufacturing and packaging specifications:
Examines candy on conveyor to ensure that it is properly formed and coated. Opens boxed candy to verify that candy is cupped, wrapped and packaged to meet company specifications. Rearranges, recups or replaces pieces not meeting quality standards, or returns rejected boxes to packaging department and annotates reason for rejection.
May brush chocolate candy to add gloss and remove markings from surface. May weigh filled containers to ensure conformity to weight marked on container.

8226-166 GRADER, DRESSED POULTRY(slaught. & meat pack.) DPT:687
GED: 2 SVP: 2 EC: 1 4 PA: L 4 7

Grades dressed poultry according to established standards:
Examines dressed poultry suspended from conveyor. Observes colour of skin. Feels poultry for presence of bruises, deformities and pin feathers. Removes fowl from conveyor shackle and sorts into specified containers according to grade. Attaches metal tags to poultry to identify grade.
May weigh filled containers and tally weight or number in each grade. May be designated by type of fowl graded; for example, Capon Grader Turkey Grader

8226-170 GRADER, GREEN MEAT(slaught. & meat pack.) DPT:687
GED: 2 SVP: 2 EC: 1 2 4 6 PA: M 4 7

Inspects, weighs and sorts pork cuts, according to standards, prior to curing:
Examines and feels meat for fat limit and defects such as bruises and broken leg bones and sets aside sub-standard cuts. Trims excess fat and ragged edges off hams, using knife. Weighs and segregates acceptable cuts according to weight range and type. Tosses cuts into assorted trucks or vats according to type.
May be designated according to cut of meat graded; for example, Belly Grader Ham Grader

8226-174 INSPECTOR, CANNED FOODS(can. & preserv., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects open cans of food during processing for conformance to standards:
Examines open containers and sets aside rejected or off-weight cans for packers to bring to standard.
May examine contents of jars to ensure correct filling arrangement and selection of items. May inspect a particular product and be designated accordingly; for example, Inspector, Pickles Inspector, Stuffed Olives

Beverage Inspecting, Testing, Grading and Sampling Occupations 8226-194 through 8226-214

8226-194 TASTER AND BUYER, BEVERAGES(food & bev., n.e.c.) DPT:287
GED: 4 SVP: 7 EC: 1 PA: S 4 7

Tastes samples of tea or coffee to determine palatability, and makes selections for purchasing and blending:
Selects samples, brews small lots of beverages, and tastes product to determine grade, approximate market value or acceptability to consumer tastes. Writes blending formulas to guide workers engaged in preparing beverages in commercial quantities. Tastes and tests new materials on arrival from commercial production for conformity to standards. Purchases beverages on basis of samples tasted.

May be designated according to product tasted; for example,
Coffee Taster
Tea Taster

8226-198 BEER TESTER(distill., brew. & ferment.) DPT:381
brewery technician.
GED: 4 SVP: 6 EC: I PA: L 4 7

Tests samples of beer, at various stages of processing, for conformity with quality-control standards:
Tests beer for air and carbon-dioxide content, clarity, stability and specific gravity, using standard laboratory equipment. Measures mineral, protein, fat and moisture content of grain, using distillation and other laboratory equipment. Determines acidity, using pH meter. Examines samples of yeast from fermenting tanks to measure shape, number, and development of cells and to detect presence of bacteria, using microscope and other laboratory apparatus. Reads colorimeter and spectrophotometer to determine colour factors. Records test results and prepares graphs and charts.
May test beer containers for conformity to standards.

8226-202 QUALITY-CONTROL TESTER, BEER-BOTTLING LINE(distill., brew. & ferment.) DPT:484
GED: 3 SVP: 5 EC: I PA: L 4 7

Tests samples of beer and containers, taken from packaging lines in brewery bottling-house, for conformance to standards:
Selects samples of crowns, cans, lids, bottles, labels, and filled containers for testing, according to specifications. Measures dimensions of samples of containers using gauges, rules and micrometers. Conducts abrasion resistance tests on cans, lids, bottles, crowns and labels, using abrasion device. Measures hardness of crowns, lids and cans, using hardness tester. Tests wet and dry tearing strengths of labels and cartons, manually. Weighs filled cans and bottles to measure volume of beer. Performs standard tests on beer, as specified, for carbon dioxide content, clarity, foam stability and specific gravity, using test equipment such as pH meter and scales. Records test results and prepares graphs and charts.
May measure bursting strength of bottles, using hydraulic bursting device.

8226-206 WINE TESTER(distill., brew. & ferment.) DPT:484
GED: 3 SVP: 5 EC: I PA: L 4 7

Tests wine samples during processing for compliance with quality control standards:
Collects samples of wine from tanks for testing, using syphon. Immerses hydrometer, then thermometer in wine sample and compares readings with gauging manual to determine sugar and actual or potential alcohol content. Measures samples for acid content and makes sediment and contamination tests, using chemicals and gauges. Examines sample for quality of colour visually or using colorimeter. Prepares small sample batches of wine according to new formulas. Maintains records of samples tested.
May calculate amount of alcohol needed to fortify wine to desired standard. May distill sample and test distillate for alcohol content. May propagate and test yeast cultures.

8226-210 LIQUOR TESTER(distill., brew. & ferment.) DPT:684
GED: 3 SVP: 5 EC: I PA: L 4 7

Tests samples of bottled liquor for compliance to quality control standards:
Requests whisky from warehouse for tasting and testing according to work order. Tastes whisky, and records acceptability of taste and proof and testing date, brand and lot number and submits information to laboratory. Labels bottle of whisky to indicate test results and routes bottles to laboratory for analysis. Tests liquor prior to bottling to verify proof, using cooler, thermometer, and hydrometer. Examines bottles to ensure correct labels and stamps have been applied. Verifies cap pressure on bottles, using torque measuring device.
May test bottled liquor for acidity, using pH meter and water. May examine old stock for evaporation and colour, comparing against standard. May arrange to have liquor tasted by panel members.

8226-214 BEVERAGE AND BOTTLE INSPECTOR(distill., brew. & ferment.; food & bev., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: I PA: S 7

Inspects bottled beverages, such as soft drinks, beer or wine for foreign matter and defective bottles:
Visually inspects contents of bottles for foreign matter, such as dirt and barrel sediment, and examines bottles for cracks, damaged caps, corks or seals or other defects as they pass on conveyor belt, in front of light and reflecting mirror. Places rejected bottles in containers for disposal.
May hold bottles up to unshielded light bulb to examine bottle and contents. May inspect empty beverage bottles passing on conveyor prior to filling.

Miscellaneous Food and Beverage Inspecting Testing, Grading and Sampling Occupations 8226-238 through 8226-299

8226-238 TESTER, FEED(feed & flour mill.) DPT:381
GED: 4 SVP: 5 EC: I 6 PA: L 4

Tests feed samples to determine nutritional value and percentage of component protein, fibre, fat, calcium and salt in sample for quality control purposes:
Grinds portion of sample to be analyzed and stores unused portion for further testing. Performs standard analysis tests on feed samples for such properties as protein, fibre, fat, carotene, calcium, and salt, using various chemicals, and standard test equipment, such as scales, ovens, and spectrophotometer. Records results of tests. Prepares solutions used in testing, according to formula.
May clean and sterilize laboratory equipment to avoid contamination. May perform routine tests on fertilizers.

8226-242 BUTTERFAT TESTER(dairy) DPT:484
GED: 3 SVP: 5 EC: I PA: L 4 7

Tests samples of milk and milk products for butterfat content:
Pours measured amount or pipettes samples from separators, standardizing tanks or other containers into flask and adds specified amount of concentrated sulphuric acid. Centrifuges sample for specified time and adds to hot water to sample. Recentrifuges sample to separate butterfat from milk. Cools sample in water-bath to allow butterfat to solidify. Compares butterfat with scale on flask to determine percentage of butterfat in sample, using dividers. Calculates amount of cream or skim milk to be added to production batch to obtain correct percentage of butterfat, according to quality control standards.
May calculate price to be paid for milk by testing composite sample and determining quality accordingly.

8226-246 STARCH TESTER(food & bev., n.e.c.) DPT:481
GED: 3 SVP: 4 EC: I PA: L 4 7

Tests starch concentrates to determine conformance to specifications:
Measures density of wet starch by pouring sample into cylinder and drops calibrated float in cylinder. Reads float level and records density after allowing sample to set for specified time. Weighs sample of starch before and after heating in vacuum oven and calculates moisture content from difference in weight, using slide rule. Mixes specified amounts of dried starch and acid, using spatula. Pours mixture into graduated cylinder and compares with colour on chart to determine amount of soluble proteins. Weighs dried starch on scales and pours into screening machine. Presses buttons to start agitation of screen and circulation of air to force starch through mesh. Weighs remaining starch and calculates weight and percentage of impurities removed, using slide rule. Records results of tests and maintains equipment.

8226-250 GRADER, SEED CORN(agric.; feed & flour mill.) DPT:685
GED: 3 SVP: 4 EC: I PA: H 3 4 7

Tends machines that clean and grade seed corn:
Lifts bags of corn from pallet and dumps contents into hopper of grading machine. Starts machines and opens chute gate to permit corn to flow through series of vibrating screens as fans blow dust, chaff, cobs, shucks and other foreign material from corn. Adjusts chute

slides to regulate flow of corn to reciprocating screens and revolving cylinders that separate seed-corn kernels according to width, thickness and length to ensure free-flow in planting machines. Examines graded kernels for colour and uniformity, using test screen. Replaces defective screens and cylinders.

8226-254 CASING GRADER(slaught. & meat pack.) DPT:687
GED: 2 SVP: 4 EC: I 4 PA: L 4 7

Inspects and grades variety of cattle, sheep and hog casings for soundness, uniformity and size:

Removes casings (intestines) from soaking tank or tierce (cask). Cleans length of casing on grading table, using scraper. Inflates casing, using air or water hose. Places inflated casing between spaced grading pegs or cut-out template to determine size and uniformity. Squeezes casing to detect irregularities, damaged sections, and foreign material. Cuts out defective sections and measures and cuts casings to length. Sorts casings according to size or condition and places on rack or in container filled with brine, awaiting use in sausage making, or other commercial applications. Cleans grading table, using hose and hot water.

May pack and salt casings for shipment. May reclaim cured casings for use, using soaking tank. May record kinds and quantities of graded casings.

8226-258 CAN INSPECTOR(can. & preserv., n.e.c.; distill., brew. & ferment.; food & bev., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Inspects lid seams of closed food or beverage cans for conformity to sealing specifications:

Collects random samples of filled cans discharged by closing machine. Cuts out centre of lid, using can opener and empties contents. Measures thickness of lid seam, using micrometer. Removes crimped edge of lid, using pliers. Measures thickness of crimped edge of can wall using micrometer, and records measurements taken. Measures thickness of bottom seams prior to filling.

May inspect bottle caps by fitting loop gauge around bottle cap to determine degree of compression. May empty contents of defective cans into new cans and place on closing-machine conveyor or into buckets.

8226-262 INSPECTOR, FOOD PACKAGING(feed & flour mill.; food & bev., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: I PA: L 4 7

Inspects and weighs any of a variety of packaged food products; such as, gelatin, soft drink powders, cereal, dog food and flour after manufacture:

Examines packages and compares with standard or sample to ensure proper filling, sealing, labeling and stamping. Weighs packages and records weight. Tests automatic scales for accuracy, using standard weights.

May keep records of percentage of variation from standard.

8226-264 SAMPLER(dairy; distill., brew. & ferment.) DPT:587
GED: 2 SVP: 2 EC: I PA: L 4

Collects samples of foods or beverages at various stages of processing and at specified times, for laboratory testing:

Opens valve, or dips, scoops or siphons samples into bottles, bags, test tubes or laboratory containers. Closes and labels containers to identify sample. Places samples in baskets or on hand truck and delivers to laboratory.

May perform elementary tests on samples. May pour part of sample into test container for government inspection. May collect samples of particular product and be designated accordingly; for example,

Beer Sampler(distill., brew. & ferment.)

Milk Sampler(dairy)

Yeast Sampler(distill., brew. & ferment.)

8226-299 OTHER INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FOOD, BEVERAGE AND RELATED PROCESSING

This group includes food and beverage processing inspectors, testers, graders and samplers, not elsewhere classified; for example, those who test candy tablets for hardness, test soyabeans during processing for quality control purposes, or sort and regrade rejected food items. Typical examples of occupational titles covered by this residual group definition are:

Reclaim Sorter(food & bev., n.e.c.)

Soyabean Tester(animal & veg. oil)

Tablet Tester(confection.)

8227-BEVERAGE PROCESSING OCCUPATIONS

This unit group includes occupations concerned with processing beverage products; such as, coffee, tea, fruit juices, soft drinks, beer, wine and liquor. Activities include: crushing, extracting, blending, mixing, grinding, roasting, cooking, maling, fermenting, cooling, filtering, carbonating, pasteurizing and distilling grains and fruits. Milk processing occupations are classified in Unit Group 8223 MILK PROCESSING AND RELATED OCCUPATIONS. Cocoa processing occupations are classified in Unit Group 8229, FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS, N.E.C.

Coffee Processing Occupations 8227-110 through 8227-126

8227-110 INSTANT-COFFEE-EXTRACTOR OPERATOR(food & bev., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 5 6 PA: L 4 7

Operates automatic instant coffee processing equipment, such as extractors and filters, from master control board, to extract soluble coffee from ground coffee beans prior to spray drying process:

Observes master control panel and gauges, and turns valves to feed roasted and ground coffee beans into extracting equipment. Turns valves and sets dials to regulate flow and temperature of water entering extractors. Adjusts valves and observes pressure gauges to control filtration and degassing of extract. Observes thermometer gauges and turns dials to control temperature of extract and flow of cooling water into plate cooler. Transfers extract into weighing tank, by turning valves. Monitors and adjusts controls on panel board to pump extract and regulate flow to spray drying equipment. Tests samples of extract to determine specific gravity, temperature, concentration and conformity to plant standards, by titration and using thermometer, hydrometer and moisture meter. Records flow rate, temperatures, pressures and other test data, for each production cycle. Circulates caustic solution and water through pipes to clean equipment. Assists in maintenance of equipment, using mechanic's tools.

8227-114 DRIER, INSTANT COFFEE(food & bev., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: M 4 7 PA: I 6

Operates automatic spray drying equipment to produce instant-coffee powder from extract by evaporation:

Prepares spray drying equipment by attaching nozzle specified for type of powder required, using wrench. Opens valves to ignite furnace and turns on air fans and water supply. Adjusts controls to obtain negative air pressure in drier and to balance air and water flow to obtain required outlet temperature. Pushes button on master control panel and observes process that blows extract from nozzle as a fine spray inside top of drier, and introduces hot air that evaporates water from extract to produce instant-coffee powder. Determines bulk density of coffee by weighing and using prepared chart. Examines sample of powder, visually on white paper, for variations in appearance such as specking and irregular colour. Adjusts powder density by injecting specified gas into extract during blowing process. Records such items as operating temperature and pressure, concentration of extract, amount of gas and type of nozzle used, and density of powder

obtained. Cleans equipment by circulating water and caustic solution throughout. Performs minor maintenance on equipment. May manually fill, weigh and seal containers of instant coffee and place containers on conveyor to storage area.

8227-118 COFFEE GRINDER(food & bev., n.e.c.) DPT:685
GED: 3 SVP: 3 EC: I 5 PA: M 4 7

Tends automatic equipment that grinds roasted coffee beans to specified fineness:

Moves controls to allow coffee beans to flow from feed hoppers into grinding machines. Starts machines and adjusts grinding rollers by turning dials or moving levers and switches. Observes grinding equipment for proper functioning and requests repairs or mechanical maintenance when required. Weighs ground coffee on floor scales before further processing, or starts conveyors that carry ground coffee to storage bins. Records production data.

May transfer ground coffee to instant coffee extractor, using dolly, cable hoist, or by turning gravity valves. May clean equipment and work area.

8227-122 COFFEE ROASTER(food & bev., n.e.c.) DPT:685
roasterman, coffee.
GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Tends ovens and associated equipment to roast coffee beans by either of the following methods:

Reads instructions to determine grades of coffee to be blended and roasted. 1. Transfers sacks of green coffee beans to dumping chute, using hoist and hand truck. Empties sacks onto chute and discards black or dead beans. Pushes beans into scale hopper of roasting machine. Weighs batch of coffee beans and opens chute that conveys beans into oven. Observes thermometer and adjusts temperature control as required. Roasts coffee for specified time. 2. Adjusts controls on panelboard to regulate rotational speed of oven cylinder rotation, rate of flow of beans into cylinders and oven temperature for each coffee blend, according to specifications. Adjusts controls that allow predetermined varieties of coffee beans to flow into cylinders from storage silos. Observes changes in colour of beans to verify functioning of automatic oven. Opens discharge gate to dump roasted beans into cooling tray and starts air blower to cool beans. Pulls lever to dump beans into storage hopper or starts bucket conveyors that carry coffee beans to storage bins.

May tend machine that grinds coffee.

8227-126 COFFEE BLENDER(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: M 3 4

Tends machine that mixes various grades of roasted coffee beans:

Fills containers with specified quantities and grades of coffee beans, and empties containers into dumping chute of machine, by hand. Presses button to start blending of beans. Pulls levers at end of prescribed mixing cycle, to transfer mixed coffee beans into suction-type ducts that convey them to cleaning, grinding and storage area.

May direct activities of helper.

Juice Processing Occupations 8227-146 through 8227-154

8227-146 CITRUS-JUICE EXTRACTOR(can. & preserv., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 2 4 7

Tends machines that wash and crush citrus fruits to extract juice:

Installs juice funnel leading from extractor to container. Empties containers of specified citrus fruit into washing machine, using power hoist. Starts machines, observes fruit rolling down chute from washer to extractor, removes unsuitable fruit, and clears blockages, using stick. Inspects machines for proper functioning and examines residue to ensure maximum extraction of juice. Notifies supervisor of faulty machine operation, or of adjustments required. Stops machines when signal indicates juice tanks are filled. Cleans and lubricates machines.

8227-150 FRUIT-PRESS TENDER(can. & preserv., n.e.c.;
distill., brew. & ferment.) DPT:685
juice extractor.
GED: 2 SVP: 2 EC: I 4 PA: M 4

Tends hydraulic press that extracts juice from fruit for use in making alcoholic or non-alcoholic beverages:

Places filter cloth on swing bed of press, or places frame equipped with filter cloth on press cart. Pulls levers or turns valves to release fruit from hopper, pipeline or conveyor onto filter cloth. Spreads fruit evenly on filter, by hand or using wooden paddle, and folds corners of cloth to cover fruit. Pushes swing bed under press or removes forming frame and pushes loaded cart into machine. Starts press by depressing button. Pulls cart or swing bed from machine, removes filter cloth and dumps fruit pulp into container. Starts pump to transfer juice for storage or further processing.

May tend power pressing equipment equipped with inflatable rubber pressing sack and screen that filters juice. May tend machine that crushes fruit to form must used to make wine.

8227-154 JUICE BLENDER(can. & preserv., n.e.c.) DPT:685
juice compounder.
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends equipment that blends fruit juices to make beverages having standard characteristics:

Opens valves to permit juices to flow from extracting machines or holding tanks, to fill blending tank with required amounts of unblended juices. Adds specified quantities of concentrated fruit juices or preservative, such as, sodium benzoate. Turns on mechanical agitators in blending tank, to mix contents as directed. Opens valves and activates pumps to transfer blended juices to holding tanks, or to bottling or canning machines.

May tend concentrator that removes juice from fruits and evaporates water from juice to make fruit concentrate used to standardize juice blends. May pasteurize and filter blended juices. May blend vegetable juices. May be designated according to type of juice processed; for example,

Citrus-Fruit-Juice Blender

Beer Processing Occupations 8227-174 through 8227-202

8227-174 WORT MAKER(distill., brew. & ferment.) DPT:582
GED: 3 SVP: 4 EC: I 3 4 PA: M 4 7

Operates equipment to grind grain and mix and cook ingredients to make mash and extract wort used for making beer, performing any combination of the following duties:

Actuates controls to start milling machine and conveyor, and opens slide gate on storage bin, to transfer grain to machine. Weighs milled grain in scale hopper. Opens gate on scale hopper to fill cooker with pre-weighed cereals and mashing tub with measured amounts of malt. Turns valves and starts pumps to admit hot water into cooker and tub, and starts power-rakes to stir mixtures in vessels. Admits steam to cook cereal and mash according to temperature and time specifications. Pumps cereal mash into mashing tub and admits steam to heat mash to specified temperature. Verifies temperature of mash, using long thermometer. Removes sample of mash, adds iodine to sample, and examines colour to determine degree of saccharization. Examines consistency of mash, using scoop, and regulates input of mash to attain correct mixture. Monitors pressure gauges, and actuates valves to regulate flow of cooked mash to lautertub (wort- filtering tub) and pump that recirculates wort through filter until desired clarity of wort has been attained. Turns valve to transfer wort to kettles for further processing upon signal from other worker. Records weight and type of grain milled, mash temperature, steam pressure, degree of saccharization and quantity of wort produced. Cools mash residue and filters with water, and transfers residue for further processing into animal feed. Washes mashing tub and cooker using cleansing solutions and high-pressure water hose.

May tend shaking machines to clean grain prior to milling. May operate specific unit of wort making equipment, and be designated accordingly; for example,

Lautertub Operator
Mash-Tub Operator

8227-178 BEER FILTERMAN(distill., brew. & ferment.)
DPT:682

GED: 3 SVP: 3 EC: I 4 6 7 PA: M 4 7

Operates primary filtering equipment to remove protein and yeast particles from beer:

Positions filter screens between frames and lowers screen assembly into filter tank, using power winch. Dumps specified amounts of diatomaceous earth into slurry tank and adds water, using metered hose. Starts agitator that mixes water and filtering agent and starts pumps to transfer mixture into filter tank to coating screens. Turns calibrated valve to release specified amount of carbon dioxide to pressurize tank and carbonate beer. Observes carbonated beer through sight glass, and adjusts valve to prevent excessive carbonation. Starts pump to transfer beer from storage tank through screens that strain protein and yeast particles from beer. Removes and examines sample of beer for clarity. Starts pump to transfer filtered beer to storage tank. Removes filter screens from tank, using power winch, and rinses screens, using hot-water hose.

May record production data, such as number of barrels and types of beer filtered.

8227-182 MASH MAN(distill., brew. & ferment.; food & bev., n.e.c.)
DPT:682

GED: 3 SVP: 3 EC: I 3 4 6 7 PA: H 4

Controls equipment to cook grain mash and boil resulting liquor (wort) with hops to flavour it preparatory to fermentation:

Mixes malt, corn (brewers grits), or barley in water, according to formula, and cooks or steeps mixture at specified temperature and for designated time. Turns valves to transfer mash to lautertub to strain and extract wort, and regulates flow of wort from lautertub to brew kettle. Adds specified amounts of hops to wort in brew kettle, and cooks brew mixture. Drains wort through hop-extractor into hot-wort tank. Connects hose lines and starts pump to transfer wort to cooler prior to fermentation. Turns valve to inject a measured quantity of yeast into wort in cooling tank. Pumps spent grain to drying tanks. Cleans equipment and flushes pipe lines, using hot water.

May weigh malt or grain, using scales. May control equipment to cook brewers grits and malt, and boil the resulting liquor with sugar and salt to produce cereal food flavouring, and be designated accordingly, Cereal-Flavour Maker(food & bev., n.e.c.)

8227-186 KETTLE-MAN(distill., brew. & ferment.)
DPT:685

GED: 3 SVP: 3 EC: I 3 4 6 PA: M 4 7

Tends kettle that boils wort and hops and straining equipment that removes hops from hot wort, during beer-making process:

Opens valve and starts pump, or signals other worker to start pump, to transfer wort from filter tank into kettle. Turns valve to admit steam into jacket of kettle to boil wort. Dumps hops into boiling wort. Observes dials and gauges and adjusts controls to maintain specified pressure and temperature. Opens valves and starts pumps to transfer wort from kettle through straining equipment that removes hops, and into hot-wort-storage tank. Starts conveyor that disposes of discarded hops. Adjusts valves to control rate of straining and monitors flowmeter and pressure gauges to ensure proper functioning of equipment. Examines strained wort through port holes and sight glasses to ensure removal of hops. Cleans and rinses kettle and straining equipment, using water hose.

May record wort-production data. May test specific gravity of wort, using hydrometer.

8227-190 COOLING-MACHINE TENDER(distill., brew. & ferment.)
DPT:665

cooler operator; wort cooler.

GED: 2 SVP: 3 EC: I 2 4 PA: L 2 3 4 7

Tends processing equipment that settles, cools and transfers wort into fermenting tank, and injects yeast into wort, performing any combination of the following duties:

Opens valves that admit hot wort from hop strainer into storage tank, to permit settling of solids before transferring wort to cooling machine. Starts pumps, turns valves and sets float line to draw hot wort through cooler and into starting or fermenting tank. Turns valves to control flow of refrigerant through cooler coils. Monitors pressure gauges, flow meters, thermometers and temperature recorders, to verify or control rate of flow and temperature of wort passing through cooling machine. Observes flow meter and opens valves to admit

specified amount of air into wort. Turns spigot to drain yeast mixture from pressurized yeast tub into yeast wagon, or starts pump to transfer yeast mixture from storage tank to yeast brink (pressurized tank that pumps measured amount of yeast to starting tank). Pumps wort from cooler to starting or fermenting tank. Connects yeast wagon and wort lines, using hand tools, or opens valve on brink tank to transfer yeast mixture to wort in starting or fermenting tank. Observes flow dials and pressure gauges to ensure that specified ratio of yeast to wort is maintained. Communicates with other workers to time wort and yeast transfers. Draws sample of wort from starting tank for laboratory analysis. Cleans inside and outside surfaces of tanks and equipment, using brush, water hose, pumps and antiseptic solutions.

May tend mixing tank to prepare yeast mixture, and extruding machine to produce yeast bars. May record production and process data. May be designated according to kind of equipment tended; for example,

Hot-Wort Tankman

Yeast-Room Man

8227-198 BEER PASTEURIZER(distill., brew. & ferment.)
DPT:685

GED: 2 SVP: 2 EC: I 4 6 PA: L 4

Tends machine that pasteurizes bottled or canned beer:

Actuates valves of hot-water spray in pasteurizer, and switches on conveyor that moves filled beer containers through machine. Observes water-temperature gauge to ensure pasteurization temperature is maintained. Pushes pasteurized containers from machine table onto conveyor by hand or using metal bar, to prevent blockages. Removes broken containers from conveyor. Monitors pasteurizing machine to detect malfunctions. Cleans equipment and work place, using water hose, brushes, scrapers and cleaning solutions.

May remove machine guards, using hand tools, and lubricates moving parts.

8227-194 CARBONATION MAN(distill., brew. & ferment.)
DPT:685

carbonator.

GED: 2 SVP: 3 EC: I 4 5 PA: M 4 7

Regulates flow of carbon dioxide into beer lines and tanks, and beer through filters, to carbonate and filter beer prior to packaging:

Observes flow meters and pressure gauges, and turns valves to admit specified amounts of carbon dioxide at specified pressures, into tanks and lines containing beer. Starts pumps to transfer beer through finishing filters and adjusts flow and pressure of carbon dioxide to control turbulence, according to specifications. Turns valves to charge slurry tanks with filtering agent and pumps agent through piping and filter to attain required filtering efficiency. Observes beer through sight glasses and recirculates cloudy beer through filters until clear. Removes sample of beer to determine carbon dioxide content, using testing device. Reads quantity and pressure and interprets test results, using comparison chart. Transfers clear beverage to bottling or barreling department. Disassembles and washes filtering units, or replaces soiled filter cakes and reassembles filter units, as required, to maintain high level of sanitation, using hand tools and water hose. Cleans work area using mop and broom.

May patch fractured glass linings of steel tanks used for storing beer.

8227-202 YEAST PUSHER(distill., brew. & ferment.)
DPT:685

GED: 2 SVP: 2 EC: I 4 6 PA: M 2 3 4

Tends equipment to remove fermented beer and surplus yeast from series of brewing vessels, and cleans vessels between production runs:

Couples hose between fermentation tank and collector-pipe line, using wrench. Opens valve on line to drain off beer for further processing. Notifies yeast plant to prepare to receive yeast and opens gravity-feed-outlet valve to permit yeast to drop into storage tanks. Climbs through access opening into tank to spray and push residual yeast out of outlet, using water hose, paddle or squeegee. Scours interior of empty tanks between production runs using water hose and specified cleaning agent.

May open valves to fill fermentation tanks to begin beer-fermentation process.

Wine Processing Occupations
8227-222 through 8227-238

8227-222 CIDER MAKER(distill., brew. & ferment.) DPT:665
GED: 3 SVP: 4 EC: I 7 PA: H 2 3 4

Tends juice extracting, processing and bottling equipment to make cider from apples, performing any combination of the following duties:

Connects hoses, using hand tools, and starts pumps to move juice or cider through processing equipment. Tends slicer, crusher press or centrifuge that extracts juice from apples, and equipment such as, settling, fermentation, cooling or storage tanks, filter presses, carbonator or bottling machine. Adds specified amounts of enzymes to settling tank to clarify juice. Adjusts flow of juice to maintain temperature of pasteurizer to destroy bacteria. Adds specified amounts of pure yeast and sugar to fermentation tank, seals tank and installs carbon dioxide escape valve. Takes samples of cider from fermentation tank for analysis at specified intervals. Transfers cider to settling tank and adds settling agent. Pumps cider through filter press to storage tank. Ensures specified temperature is maintained throughout production area. Cleans equipment and work areas. Directs seasonal workers in routine production tasks.

8227-226 CELLARMAN, WINERY(distill., brew. & ferment.) DPT:685
GED: 3 SVP: 4 EC: I 4 7 PA: M 2 3 4 7

Tends fruit crushing and wine-processing equipment, performing any combination of the following duties to make wine:

Lifts bulk grapes or pomace onto conveyor leading to crusher, disintegrator or de-alcoholizer tank. Tends crusher or press that extracts juice from grapes or pomace. Connects hoses and starts pumps to transfer juice, wine or alcohol between fermenting, settling, mixing and storage tanks. Patrols inter-connecting pipe-lines during pumping operations to detect leaks. Meters out specified amounts of sugar and water into automatic mixing tank, to produce syrup. Pumps pre-measured amounts of yeast culture and syrup into wine-filled tanks, and turns valves to admit compressed air into tank for specified time, to bring about fermentation. Adds sugar or other ingredients during fermentation, according to instructions. Verifies temperature of wine during fermentation, using thermometer, and turns valves to admit steam or coolant to heat exchangers inside tank to control temperature. Pumps specified quantity of wine from settling tank to agitator tank, adds clarifying agents and pumps solution back into settling tank. Measures contents of wine and fortifying (alcohol) tanks, using weighted tape or reads content through sight-glass. Tends filter presses used to collect sediment and precipitates. Fills barrels with specified amount of wine, using pump. Weighs wine filled barrels and deducts tare, using platform scale. Marks or stencils weight and type of wine on barrels. Cleans and sterilizes winery tanks, using air hose, water, soda ash and sterilizing solutions.

May direct winery-hands or seasonal workers. May be assigned specific tasks and be designated accordingly; for example, Clarifier, Wine Fermenter, Wine

8227-230 CRUSHING-MACHINE TENDER(distill., brew. & ferment.) DPT:685
fruit-crusher operator.
GED: 2 SVP: 3 EC: I 4 5 PA: L 4

Tends machine that crushes fruit to form must (juice, pulp and skins of grapes and other non-citrus fruit), used in making wine:

Pushes button or depresses pedal to start machine and regulate flow of fruit into crushing machine. Opens outlet valves or starts pumps to transfer must into fermenting tanks. Pushes button to start refuse conveyor that removes stems from machine, and removes debris from sump and outlets, using paddle or rod. Cleans and lubricates machine, using cloths, oil can and grease gun.

May empty fruit boxes into hopper of crushing machine, by hand or using dumping device. May tend power press to extract juice from fermented pulp.

8227-234 WINE FINISHER(distill., brew. & ferment.) DPT:685
filterman, wine.
GED: 2 SVP: 3 EC: I 4 PA: M 2 4

Tends filter press and auxiliary equipment to remove tartrates from wine and produce sheen prior to bottling:

Covers filter plates with asbestos-cellulose, nylon or paper pads and turns handwheel to close press. Connects hoses and pumps between tanks and filters. Starts pumps and press, and turns valves to admit wine through filters. Starts pumps to transfer filtered wine to storage tanks or bottling room. Replaces filter pads, and cleans filter screens. May add filtering agent such as diatomaceous earth to wine for rough (primary) filtering prior to polish (finish) filtering. May tend equipment to pasteurize wine.

8227-238 WINE PASTEURIZER(distill., brew. & ferment.) DPT:685
GED: 2 SVP: 3 EC: I 4 PA: M 2 4

Tends tanks and auxiliary equipment to pasteurize fermented wine:

Couples hoses, using hand tools, and pumps or syphons specified quantities of wine into pasteurizing equipment. Turns steam valves to admit heat. Observes thermometer, gauges and timing device to ensure that wine is heated to required temperature for specified time to effect pasteurization. Starts pumps to transfer wine from pasteurizer to storage tanks.

Liquor Processing Occupations
8227-258 through 8227-278

8227-258 GRAIN-MEAL PROCESSOR(distill., brew. & ferment.) DPT:382
GED: 3 SVP: 5 EC: I PA: S 4 6 7

Controls blending, cooking and fermenting of grain meal from master control panel, prior to distillation:

Pushes levers and buttons to start plant machinery. Reviews production schedules and adjusts panel controls to draw specified amounts of different grades of materials from storage bins onto conveyors. Observes dials and gauges and routes material through series of cookers and fermenters. Reads meters to determine load on scales and regulates loads to adjust blends. Listens for alarm signals and observes panel lights and meters for indication of overloads, malfunctions or plugged chutes. Shuts down plant, reroutes materials or adjusts feed controls as required. Notifies foreman when repairs are required. Changes charts on recorders to continuously record operational information and records other production data in log book.

8227-262 STILL OPERATOR(distill., brew. & ferment.) DPT:582
GED: 3 SVP: 5 EC: I 6 7 PA: L 4 7

Controls still that produces alcoholic liquors used for making variety of beverages such as gin, rum or whiskey:

Controls panel board to activate pumps, and controls temperature and rate of flow of distilling materials through still and auxiliary equipment, such as stripping column, rectifier, condenser and tail box. Turns dials to regulate and maintain specified temperature, pressure and rate of flow of material through processing equipment, according to formula, to obtain distilled liquor of specified proof required. Draws sample and determines proof by ascertaining temperature and specific gravity, using thermometer and hydrometer, and compares readings with standards. Sends sample for laboratory analysis. Pumps distilled liquor from tail box into cistern tank for regauging, reducing or into storage tank. Records temperature, pressure and flow meter readings as well as duration of distillation process and quantity of product distilled.

May clean internal parts of still equipment, using caustic solution. May operate still that produces high-proof alcohol from fermented wine, for use in making brandy or for fortifying high-quality wines.

8227-266 LIQUOR BLENDER(distill., brew. & ferment.) DPT:682

alcohol reducer.

GED: 3 SVP: 5 EC: I PA: L 4 7

Controls equipment to regauge, filter, rectify, blend and verify proof of alcoholic liquors prior to aging or bottling:

Reduces proof of barreled or tanked whisky by pumping specified number of gallons of whisky and demineralized water into scale tank.

Agitates mixture by turning valve that releases compressed air or by starting mechanical agitator. Determines proof of mixture by measuring temperature, using thermometer, and specific gravity, using alcohol-proof hydrometer, and comparing readings with tables from standard gauging manuals. Pushes button that starts filter-press pump to remove impurities from distilled liquor, and adjusts valves to control vacuum pressure in press and to regulate flow of liquor through press. Observes dials and gauges to ascertain that temperature and pressure remain constant during filtering process. Pumps different proofs of whiskies into agitating tank, adds specified amount of sugar, caramel and demineralized water, and agitates mixture to blend whiskies. Mixes flavourings and other ingredients with spirits according to formula, in mixing tank, and adjusts valves to control temperature and agitation, to produce brandies, cordials or fortified beverages.

May record number of gallons processed and proof of liquors. May tend cooling tank to lower temperature of whiskey before filtering.

8227-270 FERMENTATION OPERATOR(distill., brew. & ferment.) DPT:682

fermenter.

GED: 3 SVP: 4 EC: I PA: M 4

Controls fermentation process of mash inoculated with yeast, to produce sour beer (fermented mash), for use in distillation of alcoholic liquors:

Pumps specified quantity of cooked mash and yeast into fermentation tank, simultaneously, to ensure thorough mixing of mash and yeast. Opens valves to admit water into mixture, according to formula. Turns valves to admit air to mixture or starts agitators, to accelerate chemical reaction of yeast and to ensure homogeneity of fermented mash. Observes gauges and dials to ensure that prescribed temperature is maintained. Measures temperature of mash at prescribed intervals, using thermometer. Draws sample of fermented mash for laboratory analysis. Measures and records depth of sour mash in tank, using ruler. Pumps sour mash into cistern tank, prior to distilling. Cleans tanks, using caustic solution, acid and steam.

May record production information. May measure specific proof strength of mash, using hydrometer. May control equipment to ferment molasses and yeast for use in manufacture of distilled liquors and be designated accordingly, Molasses-Fermenting Operator

8227-274 TANKMAN(distill., brew. & ferment.) DPT:665

tank-house operator.

GED: 3 SVP: 3 EC: I 6 PA: L 2 4

Tends pumps and hose lines to transfer alcoholic liquors from storage tanks to bottling-machine tanks:

Connects series of electric pumps with hose or pipe lines connected to storage tanks on various levels of distillery and to tanks of bottling machines. Telephones foreman to obtain filling instructions and to ascertain proper pumping sequence. Starts pumps, and turns valves, to transfer and regulate flow of specified liquors from storage tank. Determines level of liquor in tanks, looking through man holes and using flashlight. Opens valves to admit compressed air into hose lines to clear residual liquor. Collects liquor samples for laboratory analysis, or determines proof, colour and cleanliness of liquor, using glass tube, thermometer and hydrometer. Turns valves to admit distilled water through filling machine, lines and fillers, to wash equipment prior to changing kind of liquor, and collects used water, using bottles, to recover alcohol. Gauges and records proof and quantity of liquor in bottling tanks.

May tend liquor-transfer and pumping system from central-control panel in tank-house.

8227-278 COOKER TENDER(distill., brew. & ferment.) DPT:685

GED: 2 SVP: 2 EC: I PA: L 4

Tends equipment that cooks grain meal, to prepare mash for distillation into alcohol, gin or whiskey:

Fills cooker with specified amount of water and opens valves to admit steam that circulates through pipes in vat and heats water to specified temperature. Turns handwheels to regulate flow of grain meal into cooker. Pushes button to start revolving blades in cooker to agitate mixture as it cooks. Observes gauges to ascertain temperature of mixture in cooker and turns valves to adjust temperature as specified on charts. Cooks mash for specified time and opens valve to pump cooked mash into drop tub. Opens valve that flushes cooker with caustic solution, to clean inside surfaces.

May record cooking time and quantity of mash prepared. May pump mash into fermenting tank after cooling.

Miscellaneous Beverage Processing Occupations

8227-298 through 8227-399

8227-298 YEAST-ROOM OPERATOR(distill., brew. & ferment.) DPT:682

yeast man.

GED: 3 SVP: 4 EC: I PA: L 4 7

Controls equipment to prepare mixture of mash and yeast for use in manufacture of distilled and malt liquors:

Weighs specified quantities of rye and malt meal, into scale hopper, depending upon amount of yeast required and pushes button on panel board to dump ingredients into yeast tub. Opens valves to fill tub with specified amount of water, and to admit steam that circulates through coil pipes in tub and cooks mixture. Starts revolving blades in tub, pushing button, to stir mixture as it cooks. Observes temperature gauges and chart recorders, and regulates steam pressure to maintain constant temperature as mash cooks. Pours yeast culture into cooked mash and blends mixture until thoroughly mixed. Observes temperature gauges and turns steam valves to maintain fermenting mash at constant temperature. Tests mash to determine temperature and specific gravity, using thermometer and hydrometer. Notifies other operator when mash is ready to be pumped to next processing tank. Removes sample of mash for laboratory analysis. Records yeast production.

8227-302 MALTSTER(distill., brew. & ferment.) DPT:682

malt-house operator.

GED: 3 SVP: 3 EC: I 3 4 7 PA: M 4 7

Controls equipment to germinate barley and to dry germinated grain used in preparing malt for making distilled or malt liquors, performing any combination of the following duties:

Moves lever to weigh barley conveyed into beam scale hopper or weighing tank and turns handle to drop barley into steeping tank. Turns water valve to fill steeping tank to specified level of water, and opens air valve to agitate barley and remove chaff. Turns handles after specified steeping time to dump steeped barley onto conveyors. Starts conveyors to load rotating germination drums or compartments with steeped barley. Starts fans to circulate heated moist air into drums or compartments. Observes dials and regulates temperature and humidity in drums or compartments to achieve maximum germination of barley. Starts screw-type mixing machine equipped with water sprayer to ensure uniform germination. Removes sample of steeped or germinated barley for laboratory analysis. Moves discharge chute to spread malt (germinated barley) evenly over kiln floor for drying or operates tractor-powered plow to push malt through floor traps to drying compartments. Observes temperature gauge and recording charts and adjusts hot-air dampers, and exhaust fans to maintain specified temperature in malt-drying kilns. Records malting-cycle data, such as air and water temperature and humidity content.

May start conveyor to move dried malt successively through cleaning, separating, and grading machines. May tend specific unit of malt germinating or drying equipment and be designated accordingly; for example,

Barley Steeper
Germination Man
Kilnman, Malt House

8227-306 SOFT-DRINK MIXER(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that mixes concentrates, sugar and carbonated water to produce soft drinks;
Turns valves to admit specified amounts of carbonated water and concentrated syrup into tanks, observing volume meters and pressure gauges. Observes soft-drink mixture through sight glasses, and adjusts flow of ingredients to control turbulence, and amount of mixture according to specifications.

8227-310 TEA BLENDER(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: M 4

Tends equipment that cleans and blends tea:
Selects tea chests according to blend specified. Opens lids of tea chests, using power saw and crow bar, and examines tea for mould or other defects. Weighs out specified quantities of tea using mobile floor scale, and dumps tea into hopper of machine. Pushes button to start cleaning equipment that removes dusts and wastes from tea. Moves lever to start flow of tea from cleaning machine into revolving blending drum, and sets controls to obtain required mix. Takes sample for approval. Moves lever to empty blended tea from drum onto conveyor leading to packaging machines.
May operate device that cuts tea leaves as part of blending process.
May take inventory of tea in storage.

**8227-399 OTHER BEVERAGE PROCESSING
OCCUPATIONS**

This group includes beverage processing workers, not elsewhere classified; for example, those who measure quantity and temperature of whiskey in bottles, or control regauging equipment to reduce proof of newly distilled liquor.

Typical examples of occupational titles covered by this residual group definition are:

Bottle Gauger(distill., brew. & ferment.)

Cistern-Room Operator(distill., brew. & ferment.)

**8228-OCCUPATIONS IN LABOURING AND OTHER
ELEMENTAL WORK: FOOD, BEVERAGE AND
RELATED PROCESSING**

This unit group includes occupations in labouring or other elemental work, as described under the term title 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with preparing food and related products for commercial or domestic use, and performing general and clean-up duties in a food processing establishment.

**Labouring and Elemental Occupations: Slaughtering and Meat
Cutting, Canning, Curing and Packing
8228-110 through 8228-158**

8228-110 CASING STRIPPER(slaught. & meat pack.) DPT:686
GED: 1 SVP: 2 EC: I 4 7 PA: L 4

Feeds pre-soaked beef, hog or sheep casings (intestines) into machines equipped with rollers and revolving brushes that strip, clean and prepare them for enclosing sausage:

Soaks intestines in vats, barrels or troughs filled with warm water to loosen contents and deposits. Separates intestines and removes material by hand. Feeds casings on moving chain that carries them between crushing rolls and revolving brushes that squeeze and scrape away unwanted material and mucus lining, and roll casing into shape. Adjusts tension on machine rollers. Cleans and oils casing machine, using scouring pad, steam hose and oilcan.

May clean and flush animal stomachs for use as casings. May measure and tie casings into bundles, and salt and pack bundles in containers for curing before use. May unpack and soak cured casings prior to making sausage. May be designated according to function performed or machine fed; for example,

Casing-Machine Feeder Casing Soaker

8228-114 SKINNING-MACHINE FEEDER(slaught. & meat pack.) DPT:686
GED: 1 SVP: 2 EC: I 5 6 PA: M 4 7

Feeds machine that skins pork pieces preparatory to further processing:

Turns knob or crank to regulate thickness of skinning cut to be uniformly made in meats; such as, fatbacks, jowls, hams, bacon and livers. Positions unskinned meat on conveyor bed that moves it under, or against skinning knife. Trims remaining skin fragments with hand knife. Places skinned meat into truck or onto conveyor, and skin and fat into separate containers for further processing.
May skin pork, using draw-knife.

8228-118 MEAT PACKAGER(ret. tr.) DPT:587
meat wrapper.
GED: 1 SVP: 2 EC: I 6 PA: M 4

Wraps, weighs and labels meat products for sale or shipment, performing any combination of the following duties:

Removes meat or bacon slices from discharge tray of slicing machine, arranges slices neatly on package folders and places folders on conveyor-belt trays preparatory to labelling and sealing. Cuts smoked or cured meat into slices, using slicing machine, and wraps slices in plastic bags preparatory to vacuum sealing. Weighs and wraps fresh meat cuts. Pours pork jelly and chopped pork into containers to mould and make head cheese. Counts and places packages on tray-rack or into shipping cartons. Stamps identifying data on side of carton. Stacks cartons on pallets for shipment. Records number of cartons packed on production report.

8228-120 POULTRY-COOLER WORKER(slaught. & meat pack.) DPT:587
GED: 1 SVP: 2 EC: I 2 PA: L 4

Sorts and packs whole poultry or parts in preparation for quick freezing, or for storage in freezer, performing any combination of the following duties in cooler:

Places wrapped poultry onto conveyor leading to quick freezer or places poultry in open boxes and stacks filled boxes on pallets for movement to freezer. Routes birds with damaged wrapping for re-processing. Places wrapped poultry parts on metal racks preparatory to freezing. Removes quick-frozen poultry or parts from boxes or racks and sorts them into shipping boxes according to weight or by part. Marks weight of contents on side of box, using rubber stamp and records weight of each box on tally sheet. Seals boxes, using stapler and places boxes on pallet for storage.

8228-122 SMOKED-MEAT PREPARER(slaught. & meat pack.) DPT:587
GED: 1 SVP: 2 EC: I 4 6 PA: M 4

Prepares meat for smoking, performing any combination of the following duties:

Washes, scrapes and wipes salt, slime, grease, excess moisture and discolouration from meat. Weighs meat and marks grade and weight on each piece. Places meat in stockinet (muslin bags) to preserve shape during smoking. Stuffs boneless hams, butts, picnics and rolls into artificial casing, using stuffing and sealing device. Hangs filled stockinets and casings by loop on overhead trolleys. Impales slabs of bacon on metal hangers suspended from conveyor rail. Records product data on tag attached to trolley. Starts conveyor or pushes trolleys along rail to move meat into smoke-house.

May be designated according to task performed; for example,

Hanger, Meat
Scraper, Meat
Soaker, Meat
Stockinet Man

8228-126 EVISCERATOR, POULTRY(slaught. & meat pack.) DPT:687
GED: 1 SVP: 2 EC: I 4 5 PA: L 4

Eviscerates slaughtered poultry suspended from moving conveyor, performing any combination of the following duties:

Slits skin of neck with knife to make opening and cuts away oil sac

from tail protuberance. Slits body between vent and tail and cuts vent free and pulls viscera out of body cavity for inspection. Pulls crop and windpipe by reaching into neck opening. Cuts out gizzard, opens and washes away contents under water tap and removes skin, using metal abradar. Severs and discards condemned parts and removes liver and heart. Removes lungs and kidneys by suction, using metal- vacuum tube. Removes bird from shackle and passes carcass through mechanical head remover. Positions bird on conveyor that severs feet from bird, or severs feet, using knife. Shackles bird by one leg to sizer conveyor for automatic weighing or grading. Packs giblets into small bag for insertion into poultry carcass.

May be designated according to function performed or part eviscerated; for example,
Giblet Packer
Gizzard Peeler
Lung and Kidney Remover
Vent Cutter

8228-130 GAMBRELER(slaught. & meat pack.) DPT:687
dropper; hooker.
GED: 1 SVP: 2 EC: I 4 5 PA: H 4

Inserts gambrels in hind ankles and hangs animal carcasses onto overhead rail prior to dressing:

Slits skin to expose tendons or gamb cords in hind ankles, using knife, and inserts gamb stick or gambrel (hooked-metal rod) between tendon and bone to spread legs. Lifts or hoists gambrelled carcass and hooks to trolley wheel suspended from rail. Cuts out flesh between toes of hog carcasses and removes toe nails, using hook.

May push carcasses to next work station. May remove gambrels and lower chilled carcasses from rail onto conveyor-cutting table.

8228-134 LABOURER, MEAT-PACKING PLANT(slaught. & meat pack.) DPT:687
GED: 1 SVP: 2 EC: I 4 5 PA: H 3 4

Performs any combination of the following duties in slaughtering and meat-packing plant:

Holds meat steady during cutting. Distributes supplies from storage to work stations, using hand truck. Pushes trolleys holding meat products and meat trucks between departments. Impales cured bacon slabs on hangers and suspends hangers on trolley for smoking. Unloads smoked meat from trolleys, cuts off stockinettes and stamps and tags product. Transports inedible materials from killing floor to rendering room, using hand truck, and dumps contents into rendering tank. Pushes carcasses through spray cabinets to wash them. Loads quarters and sides of beef into railroad cars or motor trucks. Dumps frozen meat products into water tanks for thawing before curing. Removes cooked hams from cooking tank and places them on dolly, or suspends hams on overhead rail racks for further processing. Weighs materials on dollies or hand trucks, and records weights to maintain production records. Removes empty trolley wheels from overhead rails and places them in chute or onto other rails for reuse. Washes equipment and utensils, and railroad refrigeration cars, using broom and water hose.

May be designated according to duties performed; for example,

Bacon Comber
Beef Lugger
Frozen-Meat Soaker
Hog-Carcass Conveyor
Package Handler, Freezers
Sausage Hanger
Trolley Cleaner
Trucker, Pork Cutting

8228-138 MEAT-LOAF TRIMMER(slaught. & meat pack.) DPT:687
loaf-end trimmer.
GED: 1 SVP: 2 EC: I PA: L 4

Trims crusty or ragged ends from meat loaves or cooked hams, and peels casings from bologna or salami products prior to slicing, using knife:

Lifts loaf, ham, bologna or salami products from hand truck to table and places in mitre box. Slides knife through slots in box to cut off crusty, ragged or rounded ends of meat product. Cuts ends of casing, pulls casing free, and removes any casing adhering to product, using knife. Discards end pieces of meat and casings in containers on truck. Places trimmed products on dolly.

May push dolly to meat-slicing section.

8228-142 NECK SKEWER(slaught. & meat pack.) DPT:687
neck pinner.
GED: 1 SVP: 2 EC: I 4 PA: L 4

Skewers loose neck-meat of dressed side of beef to improve appearance:

Fits skewer into metal holder shaped like door knob, and pushes and threads skewer into hanging neck-meat of suspended side of beef to pin meat together after head has been removed.

May roll shrouded carcass with hand tool to give meat smooth appearance. May complete pinning of muslin cloth around beef carcass.

8228-146 POULTRY SLAUGHTERER(slaught. & meat pack.) DPT:687
GED: 1 SVP: 2 EC: I 4 7 PA: L 4

Severs jugular vein of fowl passing on overhead conveyor:

Grasps head of bird shackled to moving overhead conveyor. Cuts throat with diagonal stroke of knife to slaughter bird and drain blood from carcass, preparatory to dressing.

8228-150 CARCASS WASHER(slaught. & meat pack.) DPT:687
GED: 1 SVP: 1 EC: I 4 6 PA: L 4

Washes blood and dirt from dressed animal carcasses, using hose, warm water, brush and scraper:

Sprays suspended animal carcasses with hose and warm water and uses brush or scraper to remove adhering blood, dirt and foreign material. Turns carcasses as required, by hand, and washes down the inner side.

May push carcasses along overhead rail to next work station. May shroud carcasses.

8228-154 POULTRY HANGER(slaught. & meat pack.) DPT:687
GED: 1 SVP: 1 EC: B 7 PA: VH 4

Shackles and suspends live or slaughtered poultry for killing or processing, working as member of a team:

Removes crates of live poultry from truck onto conveyor leading to killing area. Removes crate lid and grasps legs of bird and refines birds singly from shipping crates. Inserts feet into conveyor shackles preparatory to killing and defeathering. Transfers carcasses from slaughtering conveyor onto eviscerating conveyor.

8228-158 POULTRY PINNER(slaught. & meat pack.) DPT:687
GED: 1 SVP: 1 EC: I 4 5 PA: L 4 7

Removes pinfeathers from poultry carcasses:

Observes suspended carcasses approaching on moving conveyor to detect pinfeathers left by defeathering machine. Grasps bird and removes pinfeathers, using pinning knife or hand torch.

Labouring and Elemental Occupations: Fish Canning, Curing and Packing
8228-178 through 8228-206

8228-178 FISH-CLEANING-MACHINE FEEDER(fish process.) DPT:686
GED: 1 SVP: 2 EC: I 4 7 PA: L 4

Feeds machine that cleans fish by removing head, fins, viscera, and tail preparatory to canning:

Starts machine and conveyor system. Positions fish on feed table and aligns head with cutting knife. Places beheaded fish into machine trough, and pushes tail into teeth of cutting or cleaning machine or feeds machine that cuts and cleans fish automatically.

May pull lever to regulate speed of conveyors. May replace worn knives, using hand tools. May turn valves to control sprays of water in machine.

8228-182 FISH-PROCESSING-MACHINE FEEDER(fish process.) DPT:686
GED: 1 SVP: 2 EC: I 4 7 PA: L 4

Feeds cleaned fish into machines that bone, skin, or cut and pack fish sections into cans:
Starts machines and pulls levers to regulate speed of feed-conveyor. Places fish on feed conveyor of machine and observes operation to detect equipment malfunctions.
May adjust cutting knives on machine, using hand tools. May be designated according to type of machine fed; for example,
Filling-Machine Feeder
Skinning-Machine Feeder

8228-186 FISH ICER(fish process.) DPT:687
GED: 1 SVP: 2 EC: I 4 PA: M 4

Weights dressed fish, records weights, and packs fish in ice:
Reads orders to determine quantity, size, and variety of fish to be packed. Selects fish, weighs them, and records weights on shipping voucher. Shovels layer of ice in box and fills body cavity of each fish with ice. Places fish in box and fills remainder of box with ice.
May assemble boxes and stencil addresses on them. May seal boxes, using hammer and nails.

8228-190 SHELLFISH SHUCKER(fish process.) DPT:687
shucker.
GED: 1 SVP: 2 EC: I 4 6 PA: L 4

Shucks fresh or steamed shellfish, such as oysters, clams, or scallops preparatory to canning, freezing, or packing:
Holds shellfish firmly in hand and forces shucking knife between halves of shell at hinge juncture. Twists knife to sever muscles holding shell closed and pries shell open. Cuts shellfish from shell, flips it into container, and discards shell.
May break off edges of oyster shells before shucking, using hatchet. May remove hardened part of neck (siphon) of clams, using knife. May shuck a particular kind of shellfish and be designated accordingly; for example,
Clam Shucker
Oyster Shucker
Scallop Shucker

8228-194 BRINER, FISH(fish process.) DPT:687
dipper, fish.
GED: 1 SVP: 1 EC: I 4 PA: M 3 4

Immerses fresh fish fillets in brine solution to condition them for wrapping or freezing:
Places fish in wire basket and submerges basket in salt and water solution for specified time. Removes basket from brine tank and dumps fillets on conveyor belt or sets baskets aside for further processing of fish fillets.
May prepare brine and vegetable colouring solutions prior to dipping fish. May dip fish fillets or pieces in vat containing vegetable colouring matter. May clean work area, using hose, broom and shovel.

8228-198 FISH-BIN MAN(fish process.) DPT:687
GED: 1 SVP: 1 EC: I 4 PA: M 3 4

Transfers raw fish from storage to holding bins, and onto conveyors to transport them to cleaning areas:
Opens storage bin gates, to release fish into various holding bins, according to species. Opens holding bin gates to move fish onto conveyor leading to cleaning area. Expedites flow of fish, using wooden rake, hoe, water hose or pole fitted with metal prong. Shovels chipped ice into bins, to preserve fish.

8228-202 LABOURER, SHELLFISH PROCESSING(fish process.) DPT:687
GED: 1 SVP: 1 EC: I 4 5 PA: H 3 4

Performs any combination of the following duties concerned with packing, canning, freezing, or smoking shellfish:
Transports shellfish, shellfish meats, cans or cases to work area by hand, wheeled hopper, or hand truck. Loads conveyors, hoppers, or hand trucks with product, cans or cases. Spreads shellfish on conveyor or draining table, drenches them with water, and removes foreign

matter. Weighs shellfish or shellfish meat, using scales. Records weight of product on standard form. Sorts shellfish according to size, and trims off unusable portions, using knife and scissors. Packs shellfish meat in jars, cans or boxes. Cleans conveyors, machines, and work areas, using water hose.
May feed cans and lids into lidding machine. May be designated according to task performed; for example,
Shellfish Checker
Shellfish Packer

8228-206 FISH RACKER(fish process.) DPT:887
GED: 1 SVP: 1 EC: B PA: M 4

Hangs fish on racks or poles, or places them in trays. Sets racks, poles or trays in smoking room, drying room or out in sun.

Labouring and Elemental Occupations: Baking and Confectionery Making 8228-224 through 8228-238

8228-224 BAKE-PAN GREASER(bake. prod.) DPT:685
pan greaser, machine.
GED: 1 SVP: 2 EC: I PA: L 4

Tends machine that automatically coats inside surfaces of baking pans with grease:
Places container of grease alongside machine, using handcart, and inserts suction pump into container or pumps grease into reservoir of machine manually, using hand pump. Starts machine. Adjusts gauge to regulate spray of grease. Feeds pans into spray booth manually. Removes greased pans from machine conveyor and stacks them on racks. Occasionally loads pans on rack and pushes racks into steam chamber for cleaning.
May be designated according to type of pans greased; for example,
Bread-Pan Greaser
Cake-Pan Greaser

8228-226 LABOURER(confection.) DPT:586
GED: 1 SVP: 2 EC: I 5 PA: M 4

Performs any combination of the following duties in candy manufacturing establishment:
Feeds one or more candy-processing or packaging machines. Offbears, counts, inspects or culls finished or unfinished confectionery pieces and ingredients. Transfers moulds, trays of candy and supplies between storage, processing and packing areas, using dolly or hydraulic lift. Fills bags with bulk items, inserts prizes in containers, and packs, labels or wraps cartons for shipment. Observes cellophane-wrapped cartons passing on conveyor to detect defective wrapping. Removes cellophane from defectively wrapped cartons and returns cartons for rewrapping. Keeps records of production data, such as machine operating time, number of cartons filled by each packing machine and weight of wastage. Attaches bows to fancy packages of candy.

8228-230 LABOURER, BAKERY(bake. prod.) DPT:686
GED: 1 SVP: 2 EC: I PA: L 4

Works at conveyor belt or bench performing any combination of the following duties:
Feeds or offbears materials from filling, icing, depositing, enrobing, slicing, packaging or other machines. Trims edges of bakery products. Guides, stacks, separates, counts, packs, wraps and weighs bakery products. Forms cartons, and places labels inside or around packages, bags or cartons. Trims edges of bakery products.

8228-234 NUT-CHOPPING-MACHINE FEEDER(confection.) DPT:686
GED: 1 SVP: 1 EC: I PA: L 4 6

Feeds machine that chops nuts:
Carries containers of cleaned nuts to chopping machine. Places empty container under discharge outlet of chopping machine. Scoops nuts into machine hopper and starts machine. Empties container of chopped nuts into trays of containers for further processing.

8228-238 NUT SORTER(confection.) DPT:687
nut cleaner.
GED: 1 SVP: 1 EC: 1 PA: S 4

Removes defective nuts and foreign matter from bulk-nut meats by hand or using electronic-sorting machine. Observes nut meats on conveyor belt or work table. Removes broken, shrivelled, discoloured and other defective nuts and foreign matter, such as leaves and stones, by hand or using electronic-sorting machine. May dump trays of nuts on work table and deposit sorted nuts in trays or wooden containers. May be designated according to type of nut sorted; for example, Almond Sorter

Labouring and Elemental Occupations: Sugar Processing
8228-258 through 8228-270

8228-258 CHAR-KILN-FIREMAN HELPER(sugar) DPT:687
GED: 1 SVP: 2 EC: 1 7 PA: H 4

Helps to revivify char performing any combination of the following duties:
Removes carbon from kiln burners, using cleaning rod. Monitors flow of wet char through chutes and frees stoppages. Feels char leaving predrier, to check moisture content. Examines equipment and reports damage. Cleans floors in kiln area, using broom and shovel. Bags char dust from screening machine, loads bags on dolly and transports them to storage area. See also definition for term title, 02-160 HELPER (any ind.).

8228-260 CHAR PULLER(food & bev., n.e.c.; sugar) DPT:687
GED: 1 SVP: 2 EC: 1 3 PA: H 3 4

Removes contaminated char (bone charcoal) from sugar liquor and corn syrup filters for revivifying:
Opens filter-discharge gate, using hand tools. Loosens and pulls char into chute and onto kiln conveyor, using scraper. Enters filter and sweeps filters to remove remaining char. Removes filter blanket, washes in formaldehyde solution and hangs blanket to dry. Arranges and smooths dry blanket over filter grate. Replaces gate and tightens nuts evenly to prevent warping of door and leakage. Cleans char dust from work area, using broom and water hose.

8228-261 KNIFE-SETTER HELPER(sugar) DPT:687
GED: 1 SVP: 2 EC: 1 6 PA: M 4

Helps knife-setter to remove sets of knives from beet-slicing machine and performs other related duties:
Loosens nuts and setscrews on knife-block assembly and removes knife sets, using hand tools. Cleans knives, using hot water and brush. Prepositions knife blocks in slicing machine by turning handcrank to rotate slicer wheel. Obtains replacement parts from company stores. See also definition for term title, 02-160 HELPER (any ind.).

8228-262 SUGAR-BOILER HELPER(sugar) DPT:687
pan helper.
GED: 1 SVP: 2 EC: 1 5 PA: M 4

Helps to prepare and tend vacuum-pan equipment used to concentrate sugar liquor and to grow sugar crystals of specified size:
Turns valves or actuates controls to admit steam and hot water to coils and condensers and to dump pan contents at end of boiling cycle. Removes samples of sugar crystals for laboratory analysis, using proof stick (long cylindrical rod with slotted end). Turns steam valve to wash pans after dumping. Cleans pump screens with hose and water. See also definition for term title, 02-160 HELPER (any ind.).
May prepare powdered-sugar-seeding mixture used to assist crystallization process.

8228-266 FLUMER HELPER(sugar) DPT:686
wet-hopper helper.
GED: 1 SVP: 1 EC: 0 PA: L 3 4

Helps to float supply of sugar beets to wash area:
Operates controls as directed to admit sugar beets from railway cars into flume or feeds beets from hopper onto conveyor leading to flume.

Prods beets with bar to ensure continuous flow to washing equipment. Washes hopper, using hose. Removes stones, stems and trash from flume. See also definition for term title, 02-160 HELPER (any ind.).

8228-270 BEET-WASHER HELPER(sugar) DPT:687
GED: 1 SVP: 1 EC: 1 4 PA: M 3 4

Helps to wash sugar beets by performing routine tasks in beet wash room:
Removes stones, earth, beet-tops and trash from pit and vat of beet-washing-machine and moves debris from area, using wheelbarrow. Starts and stops conveyor, as instructed. Washes floors, using hose. Cleans equipment, using cleaning materials. See also definition for term title, 02-160 HELPER (any ind.).

Labouring and Elemental Occupations: Food, Beverage and Related Processing
8228-290 through 8228-326

8228-290 FOOD-PROCESS LABOURER(food & bev., n.e.c.) DPT:686
line packer; production helper.
GED: 1 SVP: 2 EC: 1 PA: H 4

Performs any combination of the following duties in food processing and packaging establishment:
Dumps prepared ingredients into hoppers of grinding and mixing machines or movable tank trucks. Transports raw materials, finished products and packaging materials about plant and warehouse, using hand or tank truck. Feeds flattened boxes into forming machine to form containers. Feeds formed containers onto conveyor for filling and places lids on filled containers. Removes filled containers from conveyor or packs food into paper bags and boxes by hand. Stacks processed food in warehouse and coolers. Removes foreign material from food on conveyor.
May inspect finished products for damage or deviations from specifications. May verify weight of filled containers emerging from packaging machines, using scales. May label shipping containers with self-adhesive tape or using hand-stamper. May perform a specific task and be designated accordingly; for example, Coffee-Blending-Machine Feeder

8228-294 MIXER HELPER(feed & flour mill.) DPT:686
GED: 1 SVP: 2 EC: 1 5 7 PA: H 3 4

Helps in mixing flour or stock and poultry feed, performing any combination of the following duties:
Directs flow of bulk grain or feed from storage bins to machines, using movable chutes or dumps pre-weighed sacks of flour, wheat, meat scraps, corn or other ingredients into hopper of mixing machine. Stirs or pokes ingredients in hopper, using paddle or metal rod to facilitate flow into mixing machine. Fills and weighs sacks of mixed products, using batch scale, and closes tops, using hand stitcher. Bundles empty bags and delivers bundles to storage area. Examines ingredients and reports sub-standard quality. See also definition for term title, 02,160 HELPER (any ind.).
May be designated according to product mixed; for example, Feed-Mixer Helper
Flour-Blender Helper

8228-298 SORTING-MACHINE FEEDER(can. & preserv., n.e.c.) DPT:686
grading-table tender.
GED: 1 SVP: 2 EC: 1 PA: H 3 4

Feeds automatic machine that sorts fruits or vegetables according to size preparatory to processing, working as member of a team:
Places empty containers beneath discharge outlets of machine. Unloads containers of fruits or vegetables from trucks onto conveyor belt leading to sorting machine, or dumps fruits or vegetables into feed chute and opens chute to feed material into machine. Starts machine and removes filled containers from discharge outlets and replaces with empty ones. Cleans and lubricates machine, using oil can or grease gun.

8228-302 WASHING-MACHINE FEEDER(can. & preserv., n.e.c.) DPT:686
dumper-washer.
 GED: 1 SVP: 2 EC: 1 4 PA: M 4

Feeds machine that washes raw fruits or vegetables preparatory to canning, freezing or packaging:
 Opens valve to fill machine with water and adds specified cleaning and wetting agents. Dumps containers of raw fruits or vegetables into flume or machine hopper or opens gate of storage bin to allow produce to fall into machine. Starts machine that washes produce. Opens discharge chute after specified interval to release washed produce onto conveyor for further processing. Drains, cleans and refills tank of machine at designated intervals.
 May lubricate machine. May be designated according to type of washer fed, or produce washed; for example,
 Apple Washer
 Carrot Washer
 Raisin Washer
 Washing-and-Waxing-Machine Tender

8228-306 EDIBLE-OIL-PROCESS LABOURER(animal & veg. oil) DPT:687
 GED: 1 SVP: 2 EC: 1 4 PA: H 4

Performs any combination of the following duties in processing and packaging of edible oil products:
 Trucks or carries supplies to work area and forms cartons for packing and shipping products. Feeds bottles, cans or cartons onto conveyor for filling, tops-up under-filled containers and removes damaged containers from conveyor. Dumps liquids from damaged containers, or places containers in tank, closes lid on tank and opens steam valve to melt and reclaim solid material. Cleans equipment and work area, using steam hose, mops, broom, squeegee and cloths.

8228-310 LABOURER, STARCH FACTORY(food & bev., n.e.c.) DPT:687
 GED: 1 SVP: 2 EC: 1 4 5 PA: VH 2 3 4

Performs any combination of the following duties to convert grain such as corn or wheat into starch:
 Transports bags of grain from storage to production area as directed, using pallet mover. Opens sacks, and dumps materials into chute or conveyor leading to grinding mill. Flushes impurities from surface of starch solution, using water hose. Opens valves to drain water from solution and mix fresh water with settled starch. Fills and weighs bags of dried starch, using scale, and transports bags to storage area.
 May add and mix chemicals to starch milk as directed. May perform a specific task and be designated accordingly; for example,
 Starch Flusher

8228-314 LABOURER, SYRUP PROCESSING(food & bev., n.e.c.) DPT:687
 GED: 1 SVP: 2 EC: 1 PA: M 4

Performs any combination of the following duties concerned with bottling or canning corn syrup:
 Transfers empty bottles or cans from receiving room to storage area, using hand truck. Collects rejected bottles and cans of corn syrup and pours contents into strainer to remove impurities and recover syrup. Places rejected bottles onto conveyor for transfer to washing machine, and carts damaged cans to scrap area, using hand truck. Cleans work area and reservoir of filling machine, using water hose and brushes.

8228-318 LABOURER, YEAST PLANT(food & bev., n.e.c.) DPT:687
 GED: 1 SVP: 2 EC: 1 PA: H 3 4

Performs any combination of the following duties in a yeast fermentation plant:
 Transfers raw and finished materials to production and storage areas, using hand truck. Draws samples of wort from tank for laboratory analysis. Cleans fermentation tanks, using brush, water and steam hoses.

8228-322 POTATO-CHIP SORTER(food & bev., n.e.c.) DPT:687

GED: 1 SVP: 1 EC: 1 PA: L 4 7

Removes defective or discoloured potato chips from packaging-line conveyor:
 Observes fried potato chips on moving conveyor and removes chips that are burned, or broken.

8228-326 FRUIT SPLITTER(can. & preserv., n.e.c.) DPT:687
 GED: 1 SVP: 1 EC: 1 PA: L 4

Cuts fruit, such as cherries and peaches, into halves and removes pits:
 Cuts fruit into halves at suture, using sharp knife and removes pits and pit fragments. Places fruit halves on conveyor. Removes and empties containers filled with pits into waste bin.

8228-399 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FOOD, BEVERAGE AND RELATED PROCESSING

This group includes labourers and elemental workers, not elsewhere classified; for example, those who clean food processing and related equipment, sterilize containers, feed machines that chop inedible material prior to rendering, and salvage improperly packed food products. Typical examples of occupational titles covered by this residual group definition are:

Barrel Sterilizer(food & bev., n.e.c.)
 Bin Cleaner(feed & flour mill.)
 Filter Washer(distill., brew. & ferment.)
 Hasher, Inedible Material(slaught. & meat pack.)
 Salvage Man(can. & preserv., n.e.c.)

8229-FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with processing food and beverage products; such as, condiments, oils and fats, gelatine, yeast, unrefined chocolate, and other miscellaneous food and beverage products. Activities include: grinding, mixing, cooking, roasting, drying, cutting, freezing, preserving, packaging foods; and cleaning and washing processing equipment or containers.

Condiments Processing Occupations 8229-110 through 8229-130

8229-110 FINISHER, DRESSINGS(food & bev., n.e.c.) DPT:685

GED: 3 SVP: 3 EC: 1 PA: L 4

Tends equipment to process mixture of essences, fats and oils to make products such as whipped topping or salad dressings:
 Turns valves and starts pump to transfer specified amounts of essences, fats and oils from blending tank to machines that remove oxygen from emulsion, pasteurize and homogenize mixture and fill storage tank. Observes gauges, and adjusts valves to control pressure and temperature in pasteurizer, homogenizer and cooling tank, according to formula. Observes gauges on storage tank to maintain specified quantity of stock. Records process temperature and pressure, and other production data on log sheet. Cleans equipment between production runs, using hot water, solvents and brushes.
 May be designated according to food product processed; for example,
 Salad-Dressing Finisher
 Whipped-Topping Finisher

8229-114 RELISH MAKER(can. & preserv., n.e.c.) DPT:685
GED: 3 SVP: 3 EC: 1 PA: H 3 4

Weighs, measures and mixes diced or ground vegetables, flavourings and spices according to formula, and tends cooking equipment to make relish or sauce:

Weighs or measures ingredients such as vinegar, spices, sugar, salt, pickles, peppers, tomatoes and onions, using scale and measuring containers. Lifts and dumps bags of ingredients into cooking kettle and turn valves to add measured quantities of liquids such as vinegar and water. Starts mixer or stirs ingredients with paddle, and turns valve to admit steam to heating jacket of kettle to cook contents for prescribed time. Observes mixing and cooking process to ensure thorough blending and cooking of ingredients. Opens discharge valve or starts pumps to transfer ingredients to filling machine or storage tank. Cleans kettles with scouring pad, cleanser and water.

May cook condiments to make relish or sauce. May be designated according to product made; for example,

Chow-Chow Maker

Steak-Sauce Maker

8229-118 SPICE MILLER(food & bev., n.e.c.) DPT:685
spice grinder.

GED: 2 SVP: 4 EC: 1 7 PA: H 4 7

Tends machines that grind spices, such as, cinnamon and chili pepper: Lifts and dumps bags of spice into storage hopper and opens gate to fill hammer or rolling-type grinding mill with spice. Moves lever to control spice feed and places containers under sifting screen or discharge spout. Examines visually or feels crushed spices to verify consistency of grind. Cleans or replaces rollers, sifters and other machine parts.

May be designated according to type of spice ground; for example,

Chili-Pepper Grinder

Cinnamon Grinder

8229-122 MIXER, DRESSINGS AND SAUCES(can. & preserv., n.e.c.; food & bev., n.e.c.) DPT:685
wet-condiments mixer.

GED: 2 SVP: 3 EC: 1 PA: H 4

Tends automatic mixing and blending machine to prepare liquid condiments; such as, mustard, salad dressing, whipped topping mixtures, mayonnaise and sauces:

Weighs out and measures ingredients; such as, eggs, spices, oils and salt according to formula. Dumps or pumps ingredients into hopper of mixing machine by hand, conveyor or bucket hoist and turns valve to admit metered amounts of liquid ingredients into mixing tank. Sets thermostats to maintain specified temperature. Starts mixing machine for prescribed time cycle. Pulls lever or starts pumps to transfer mixed condiments to storage tanks or filling machines, or uses scoop to empty mixer. Records mixing time and batch number on record sheets at end of mixing cycle.

May tend combined grinder-blending machine, or roller mill to grind dry ingredients prior to mixing. May pump whipped topping mixture into homogenizer and add flavouring prior to pasteurization. May be designated according to product mixed; for example,

Mayonnaise Mixer(food & bev., n.e.c.)

Mustard Mixer(food & bev., n.e.c.)

Roux Mixer(food & bev., n.e.c.)

Whipped-Topping Mixer(food & bev., n.e.c.)

8229-126 SPICE FUMIGATOR(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 6 PA: VH 4

Tends equipment that fumigates nuts or spices:

Stacks containers of spices or nuts, or moves loaded pallet, into fumigator tank or room, using hand truck. Starts pump to exhaust or expel air. Pours or pumps specified quantities of liquid or vapour fumigant into tank or room. Opens valves and starts vacuum pump or blower to remove fumigant after specified time. Removes nuts or spices from tank or room.

8229-130 SPICE MIXER(food & bev., n.e.c.) DPT:685
blender, dry seasonings.

GED: 2 SVP: 3 EC: 1 7 PA: H 4

Tends machine that mixes spices with other ingredients for use as dry seasonings:

Measures and weighs specified quantities of spices and other ingredients such as flour, milk powder, ground chili peppers, garlic and salt. Lifts and dumps ingredients into hopper of mixing machine or opens valve to admit specified amount of each ingredient into mixer. Checks off ingredients used on batch record sheet. Sets controls to regulate mixing time and speed, and starts machine to mix ingredients to specified consistency. Submits sample of product to laboratory for quality control analysis. Moves lever to discharge mixed product into containers. Weighs filled containers and applies identification label using brush and glue.

May sift spices before mixing, using mechanical sifter. May mix small batches, using protable mixer. May load and unload pallets or containers of ingredients and drive pallet truck. May be designated according to type of spice mixed; for example,

Mixer, Chili Powder

Oils and Fats Processing Occupations

8229-150 through 8229-166

8229-150 HYDROGENATION OPERATOR(animal & veg. oil)
DPT:682

hardener.

GED: 3 SVP: 6 EC: 1 4 6 PA: M 2 3 4 7

Controls equipment that chemically converts and hardens base oils in manufacturing products, such as margarine and shortening:

Starts pump and adjusts valves to move pre-measured batches of refined oils or fats into hardening vessel. Weighs, mixes and adds specified amounts of catalysts. Opens valves to heat oil to hydrogenation temperature and establish vacuum to evaporate moisture from oil. Turns valve to start flow of hydrogen through oil to harden batch. Samples and tests hardening properties of oil in batch, using refractometer. Closes hydrogen valves at specified refraction reading and draws sample for laboratory tests. Pumps hardened oils through filter press to remove catalysts and attaches lines to transfer filtered oil to scale tank. Compares weight of filtered oil against unprocessed oil to verify efficiency of drying process. Starts pumps to add specified amounts of blending oils to blending vessel and turns valves to heat and blend oils for required time. Observes temperature, vacuum and pressure gauges and turns valves to make adjustments. Pumps finished oils through filter press and cooling tower to holding tank. Purges system and cleans equipment, using steam, hot water and scraper. Maintains batch and production records.

8229-154 MARGARINE PROCESSOR(animal & veg. oil)
DPT:682

GED: 3 SVP: 6 EC: 1 3 4 6 7 PA: H 4 7

Operates equipment that mixes and churns ingredients to produce margarine:

Mixes specified amounts of powdered milk and water in steam-heated kettle, equipped with agitator. Opens steam valves to heat solution above pasteurizing temperature and transfers pasteurized milk into mixing vat. Weighs oil and measures additives, such as colouring, preservatives, stabilizers, salt and vitamins, according to formula, using scale or graduate. Dumps additives into mixing vat, manually, and starts agitator to blend and emulsify ingredients. Observes temperature gauge and adjusts steam valves to ensure vat temperature complies with specifications. Stops agitator upon completion of mixing cycle, and turns valve to transfer ingredients to cooling unit. Verifies acidity level of product by titration or using pH meter. Draws sample of product for colour analysis in laboratory. Calculates weight of colouring required to conform with specifications. Disassembles and cleans equipment, such as, product lines, pumps, tanks, kettles, and changes filters.

May dump contents of damaged margarine containers into heating and mixing vats for reprocessing. May position sterilized barrels under valves of holding tanks for filling.

8229-158 VOTATOR TENDER(animal & veg. oil) DPT:685
GED: 3 SVP: 5 EC: I 5 6 7 PA: L 4 7

Tends votator machines that cool, solidify cream to liquid lard, shortening or margarine preparatory to packaging, or use in making foods, such as bakery or confectionery products:

Turns valve and pumps hot liquid into votator-cooling tank. Adjusts temperature and agitator controls to cream solidifying product to desired texture. Turns valve to transfer cooled product to filling and packaging units. Inspects samples of product for weight, colour, oil streaks, consistency or lumpiness, and makes adjustments as required. Cleans lines and equipment using, pressurized steam hose and nitrogen gas.

May tend combined votator-packager that assembles and fills cardboard containers. May transfer unsatisfactory product to cooling tank for reprocessing. May tend unit that fills and freezes cartons with processed liquid materials.

8229-162 OIL-CLARIFIER TENDER(animal & veg. oil;
slaught. & meat pack.) DPT:685
oil-purifier tender.
GED: 2 SVP: 3 EC: I 3 6 7 PA: M 4

Tends equipment that purifies and clarifies animal or vegetable oils for use in food preparation:

Turns steam valve to heat clarifying tank to specified temperature. Installs strainers or filters in clarifying tank. Turns valve to start flow of oleo stock (animal oil) or vegetable oil, or shovels hashed beef fat into tank. Shovels salt into clarifying tank to settle impurities and removes foreign material from surface of stack, using long-handled scoop. Observes gauges, and adjusts valves to maintain oil at specified temperature. Opens valve to pump clarified oil to storage tank for further processing. Records production data. Cleans equipment and work place, using hot-water hose.

May tend grinder to hash chilled-beef fat. May tend filter press to separate residual oil from stearine (fatty solid). May fill containers with oil or stearine for shipment.

8229-166 ROLLER-ROOM MAN(animal & veg. oil) DPT:685
ammonia-roll operator; chill-roll operator.
GED: 2 SVP: 3 EC: I 4 6 PA: M 3 4

Tends machines equipped with quick-chill rolls to stabilize and solidify lard or shortening prior to packaging:

Opens valves to admit refrigerant into rolls, and presses buttons to start rolls and agitators. Opens valve to pour pastry oil or melted lard onto surface of chill rolls to solidify material into flakes which are scraped from rolls by blade attachment and dropped into troughs. Shovels flakes from troughs into hand truck and pushes truck to hashing machine. Shovels product into hasher to break up flakes. Scoops up and kneads hashed product and packs into metal containers for commercial use or into hopper of machine that forms and wraps domestic-sized packages. Seals and labels containers. Cleans and oils equipment, using steam hose, spray gun and vegetable oil.

Gelatine Processing Occupations
8229-186 through 8229-198

8229-186 GELATINE-EXTRACTOR TENDER(food & bev.,
n.e.c.) DPT:665
GED: 3 SVP: 6 EC: I PA: L 2 4 5

Tends equipment to extract edible gelatine liquor from treated ossein (insoluble fibrous bone protein):

Signals to other worker to pump slurry of ossein and water from lime house to extraction tanks. Turns valves to drain slurry water from extraction tanks and fills tanks with hot water. Allows ossein to soak for required period of time to extract gelatine. Drains gelatine liquor from tanks and pumps into holding tanks. Directs activities of other workers engaged in treating, extracting, filtering, evaporating and drying gelatine.

8229-190 GELATINE-EVAPORATOR-FILTER
OPERATOR(food & bev., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I 3 4 PA: M 4

Operates evaporator and filter press to concentrate and clarify edible-gelatine liquor:

Opens valve to admit and regulate steam in evaporator. Tests sample of gelatine liquor for specific gravity, using hydrometer, and pumps liquor into evaporator. Observes gauges and adjusts controls to maintain specified temperature, pressure, and liquid level. Pumps liquor into mixing tank when liquor reaches required specific gravity. Dumps in hop of filtering materials, such as, diatomaceous earth, and starts agitator. Turns valves to open lines and pump slurry through filter press to remove impurities from gelatine liquor. Inspects filtered liquor for specified degree of clarity and circulates cloudy liquor through filter until clear. Reads gauges and adjusts controls to maintain specified pressure. Turns valves to pump filtered liquor to storage tank. Cleans filtered impurities and sediment from filter-press screens, plates and cloths, using water, steam or compressed air.

May tend equipment that cleans and reshapes cakes of wood pulp used as filtering material in press. May tend ion-exchangers that remove metallic salts from gelatine solution.

8229-194 EDIBLE-GELATINE PROCESSOR(food & bev.,
n.e.c.) DPT:685
GED: 3 SVP: 3 EC: I 4 5 PA: M 4 7

Tends line of machines that process edible gelatine by extruding, drying, milling, blending and sifting:

Sets controls to pump viscous gelatine liquor through congealing coolers and machines that extrude noodle-shaped lengths of gelatine onto conveyors passing through drying compartments. Feels material to test moisture content and adjusts heater or fan controls to attain specified dryness. Reads hygrometer to detect excessive moisture in drying compartments, and starts dehumidifier when required. Starts conveyor to transfer dried gelatine for milling. Starts mills and shakers equipped with screens of specified mesh size, to grind, sift and discharge gelatine powder into drum. Transfers drums to blending machine, using lift truck or conveyor. Dumps specified types of gelatine from drums into blender hopper. Stops machine on completion of blending cycle and pulls lever to fill shipping containers to required weight. Observes line of machines to detect malfunctions, and stops line when malfunctions occur. Listens for bell that signals when drum is nearly full and replaces loaded drum.

May stamp, stencil or glue identifying information and shipping instructions on containers. May deliver containers to shipping dock, using hand or fork lift truck and load product into motor truck. May operate a particular gelatine-processing machine and be designated accordingly; for example,
Gelatine-Blending-Machine Tender
Gelatine-Drying-Machine Tender
Gelatine-Grinding-Machine Tender

8229-195 COOKER, GELATINE STOCK(food & bev., n.e.c.)
DPT:685
GED: 2 SVP: 2 EC: I 3 4 PA: L 2 4

Tends equipment to cook chopped pork skins used to make edible gelatine:

Signals workers to fill kettle with stock. Turns valve to allow water to flow into kettle to submerge stock. Starts heaters to cook stock for prescribed period of time at specified temperature. Tests samples of liquor for specific gravity to determine amount of gelatine that can be made from liquor, using hydrometer and consulting conversion tables. Turns valves to drain liquor from kettle to storage tank and refill kettle with water. Cooks stock several times at progressively higher temperatures until cooking process is completed. Stirs stock as required, using wooden paddle.

8229-198 GELATINE-STOCK MAKER(food & bev., n.e.c.)
DPT:685
GED: 2 SVP: 2 EC: I 4 5 6 7 PA: M 4 1

Tends equipment that washes, treats and shreds pig skins to make stock prior to extracting edible gelatine:

Removes pig skins from containers, and drops them into washing vats. Turns water valve to flush away foreign material and starts paddle wheel to agitate skins for prescribed time. Stops agitator and flow of water and drains vat. Opens valve and starts pump to transfer acid

into vat to destroy bacteria in stock. Drains acid after specified interval, and flushes skins with water to remove residual acid. Starts conveyor and skin-chopping machine and forks skins onto conveyor that feeds chopping machine and carries hashed skins to cooking kettle for extraction of gelatine.

Yeast Processing Occupations
8229-218 through 8229-238

8229-218 MOLASSES-WORT PROCESSOR(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4

Tends equipment to prepare molasses wort for use in production of brewer's yeast:

Turns valve and starts pump to transfer molasses into weigh tank. Observes scale, and pumps measured amount of molasses into weigh tank. Adds specified quantity of water and chemicals to molasses to precipitate impurities. Starts mixing unit and opens valves to admit steam into heating tank to heat molasses to specified temperature. Pumps molasses to centrifugal clarifier or through filter to settling tank to remove impurities. Observes level indicators and pumps specified amount of cane molasses to mix with beet molasses in holding tank.

8229-222 YEAST-DRIER(distill., brew. & ferment.; food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4

Tends equipment that extrudes and dries compressed yeast to make baker's active dry yeast:

Dumps compressed yeast into hopper of extruding machine. Observes temperature and moisture gauges on drier and adjusts controls to attain prescribed drier temperature and humidity. Moves control to start extruder that forms yeast into noodle shape and deposits them on belt conveyor and into drier. Collects yeast samples from drier at specified times for laboratory analysis, and adjusts drier controls as result of tests. Opens outlet of drier to fill containers with yeast pellets, and pushes containers to scale for weighing. Records weight of containers on production-control log. Transfers containers of yeast to storage area, using lift truck.

8229-226 YEAST MAKER(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4

Tends series of tanks to inoculate molasses wort with pure yeast culture to produce seed yeast for use in production of baker's yeast:

Admits molasses wort and specified quantities and kinds of chemicals into tank, and adds yeast culture to mixture in tank. Observes thermometer on tank and opens valves to admit water into coils of tank to maintain specified temperature. Starts air compressor to pump air into tank to aerate yeast mixture. Tests specific gravity and acidity of mixture, using hydrometer and pH meter. Adds chemicals to adjust acidity as indicated by test results. Starts pump to transfer wort and yeast mixture through successive holding or fermentation tanks and centrifuges.

May send samples of seed yeast to laboratory for analysis. May specialize in a particular phase of yeast making and be designated accordingly; for example,

Seed-Yeast Maker
Yeast Fermenter

8229-230 YEAST MIXER(food & bev., n.e.c.) DPT:685
yeast-emulsifier tender.
GED: 2 SVP: 3 EC: I PA: L 4 7

Tends machine that mixes compressed yeast with emulsifier preparatory to extruding and drying:

Fills mixer with specified amount of compressed yeast, using scoop. Pours specified quantity of emulsifying agents that form, stabilize and whiten yeast. Starts agitators to mix ingredients for specified time. Examines and feels mixture to determine colour and consistency, and turns valve to add amount of water to give yeast required consistency. Opens valve to transfer emulsified yeast to extruder and bar cutting machine.

8229-234 YEAST CUTTER(food & bev., n.e.c.) DPT:665
GED: 2 SVP: 2 EC: I 6 PA: L 4

Tends machine that extrudes compressed yeast into continuous bars, and cuts bars to specified length:

Signal other worker to fill extruding machine hopper with yeast. Attaches bar-forming nozzle to extruder using hand tools and starts machine. Observes yeast bar emerging from machine onto table and removes cracked or malformed bars from machine table for reprocessing. Cuts yeast bar into specified lengths using knife attachment when end of bar reaches cutter guide. Places bars on conveyor to wrapping machine.

8229-238 CENTRIFUGE TENDER, YEAST(food & bev., n.e.c.) DPT:685
yeast-separator man.
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends one or more centrifuges and related equipment that separate yeast-cream (concentrated yeast suspension) from fermenter liquor or wash water:

Presses panel-board controls to start centrifuge and turns pump valves to control flow of fermenter liquor or wash water from storage tank to centrifugal separators. Takes sample of spent liquor or wash or yeast cream and examines sample to determine whether yeast has been removed. Turns valves to adjust flow of fermenter liquor or wash water into centrifuge to ensure maximum recovery of yeast cream and checks meter readings to prevent overloading of drive motors. Disassembles centrifuges, using chain hoist, and washes parts with soap and hot water.

May test sample of yeast cream for acidity using pH meter, and add specified chemicals to attain desired level of acidity. May transfer washed-concentrated yeast-cream through cooler to holding tank for subsequent use in making yeast products and be designated accordingly,

Yeast-Cream Washer

Unrefined-Chocolate Processing Occupations
8229-258 through 8229-294

8229-258 COCOA-BEAN PROCESSOR(confection.) DPT:662
GED: 3 SVP: 6 EC: I 5 6 PA: M 2 4 7

Operates variety of equipment such as cleaner, continuous roaster, cracker and fanner, dryer and grinder to produce chocolate liquor from cocoa beans by performing any combination of the following duties:

Opens jute bags containing cocoa beans and dumps beans into cleaning machine hopper to remove dirt. Turns gas valves and electric switches to start and heat rotating roaster. Sets controls to regulate temperature and speed of rotation of roaster. Starts conveyor to transfer specified type and quantity of beans to roaster. Tests samples of beans at various intervals during process cycle by tasting, crumbling between fingers to determine moisture content, or visually examining for colour. Adjusts temperature, feed rate and speed of roaster as required. Starts cracking and fanning machine to break and remove husks from roasted beans. Observes nibs (cracked roasted cocoa beans) and shells to evaluate husking process and adjusts machine controls accordingly. Opens slide gate on fanner to convey nibs for dutch processing (chocolate mixed with milk). Starts agitator to mix beans in treating tank for specified time. Opens gate to release beans onto conveyor to dryer machine. Starts gas-fired dryer, sets speed control and feels beans for dryness and transfers dried beans onto conveyor to roaster or grinding machine. Turns valve to pump chocolate liquor to storage tanks. Patrols area to ensure co-ordination of machines and equipment to attain specified rates of production. Directs activities of other workers engaged in duties, such as transporting ingredients, feeding machines and cleaning equipment and work areas.

8229-262 COCOA-BEAN ROASTER(confection.) DPT:685
GED: 3 SVP: 5 EC: I 3 6 PA: M 4

Tends one or more roasters to remove moisture and impart specified colour and flavour to cocoa beans:

Sets thermostat or fuel valve to heat roasters to specified temperature. Pulls handle to open hopper and drop beans into roaster. Starts roaster cylinder rotating to roast beans evenly. Examines sample of beans for colour, dryness, or brittleness after specified roasting cycle, and tastes

bean to judge if flavour conforms to standard. Observes temperature chart to ascertain heat pattern of roaster, and adjusts roaster flame and dampers to control circulation of hot air on basis of evaluation of samples. Pulls handle when desired degree of roasting is reached to discharge beans onto conveyor that transfers beans to cooling basin or next processing station. Records amounts of beans roasted. May load bags of cocoa beans on dolly, pull dolly to machine and empty bags into hopper.

8229-266 CHOCOLATE REFINER(confection.) DPT:682
chocolate-finisher operator; chocolate-refining roller.
GED: 3 SVP: 4 EC: I 3 5 6 PA: M 4

Operates refining machines equipped with rollers to grind chocolate paste to specified fineness:

Starts conveyor to feed chocolate into refiner hoppers. Turns handwheels on machine to adjust clearance between rollers to achieve specified fineness and opens hopper to feed chocolate between rollers. Observes thermometer or feels rollers and turns water valves to maintain specified temperature of rollers. Visually examines, feels, and tastes ground chocolate crumb or paste to ascertain if colour, texture, and taste meet standards. Collects samples of paste for laboratory analysis. Uses scoop or opens doors on machine to feed refined chocolate paste into wheeled troughs or barrels or onto conveyor to mixing tanks.

May weigh and push wheeled carts or barrels to next work station or cold storage rooms. May observe flowmeters, and turn valves to measure out cocoa butter, vegetable oil, and other ingredients according to formula to fortify chocolate in mixing tanks.

8229-270 COCOA-POWDER MAKER(confection.) DPT:682
GED: 3 SVP: 3 EC: I 3 5 6 PA: H 2 4

Operates automatic hydraulic cocoa presses to remove cocoa butter from chocolate liquor, and cocoa crushing and milling equipment to make powdered cocoa, performing any combination of the following duties:

Starts pump to transfer cocoa liquor from storage to measuring tank, and sets control to heat liquor to specified temperature. Verifies level indicator and sets automatic data recorder. Sets pressure control and stroke of cocoa-press ram, as specified, using hand tools. Starts pumps that automatically fill pots with chocolate liquor, and actuates ram that extrudes cocoa butter into holding tank and ejects cocoa cakes onto conveyor. Starts pump that forces cocoa butter through filters and into storage tanks. Starts compressor, crusher and vibrator-conveyor that carries cocoa cakes between crusher rollers and into hammer mill for grinding into powder. Starts conveyor to pass cocoa powder through cooler and into air-classification system that deposits powder in various containers, according to degree of fineness. Collects powder samples for laboratory tests. Fastens bag to holding-tank outlet, and opens discharge valve to fill bag with product. Lifts bag from filler outlet, adjusts weight of bag to specifications, and closes top of bag, using sewing machine. Records production data, such as cycle time of hydraulic press and weight of cocoa butter prior to filtering.

May operate either cocoa-butter extracting or milling equipment and be designated according to particular process; for example, Cocoa-Mill Operator
Cocoa-Press Operator

8229-274 COCOA-NIB GRINDER(confection.) DPT:685
chocolate-liquor maker.
GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends one or more mills that grind cracked cocoa beans (nibs), or pre-ground cocoa-bean paste to make chocolate liquor:

Starts grinding machine and opens slide gate of hopper to admit nibs, or opens valve to allow paste to flow from paste-grinding mills. Monitors gauges that indicate amount of friction produced by grinding stones, and moves handle to adjust clearance between stones as required. Observes colour, tastes and feels liquor to ensure conformity with specifications. Draws and sends sample for laboratory analysis. Opens valves and starts pump to transfer liquor to storage tanks.

May pre-grind nibs into paste.

8229-278 COCOA-BEAN CLEANER(confection.) DPT:685
GED: 2 SVP: 2 EC: I 3 7 PA: H 4

Tends machine that removes foreign material from cocoa beans:
Selects and transports bags of cocoa beans to hopper of cleaning machine, using hand truck, or starts conveyors that transfer beans from silo to machine hopper. Cuts bags open and dump beans into hopper. Positions conveyor spout to direct beans after cleaning to specified holding silo or hopper. Starts conveyors that carry beans through machine and air-cleaning system to remove foreign matter. Monitors cleaning process to detect malfunctions or material blockages. Stocks bags of residue removed from discharge spout of air-cleaning system. Examines silo to verify storage of specified type of bean.

8229-282 CHOCOLATE-CRUMB MAKER(confection.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends equipment that mixes and forms chocolate paste into crumbs (small pieces) and dries crumbs for storage, prior to further processing:

Starts kneading machine to mix chocolate with condensed milk, and adjusts handwheel or sets panel board control to attain specified consistency of mixture. Examines mixture to ensure conformity with specifications. Turns handwheels to lower conveyor chute that scoops up chocolate mixture and releases it over grinder rollers. Places drip-pans under grinder rollers to catch chocolate mixture. Stacks filled pans to allow chocolate to air dry and become crumb, or opens discharge chute to automatically release processed crumb into storage hopper.

8229-286 COCOA-BEAN-SHELLING-MACHINE TENDER
(confection.) DPT:685
GED: 2 SVP: 2 EC: I PA: H 4

Tends one or more machines that shell and crack cocoa beans and separate shells from nibs (cracked roasted beans) prior to processing into chocolate:

Loads specified quantities of various types of cocoa beans into shelling-machine hopper, using bucket. Starts machine rollers and blowers that shell and crack beans and starts conveyors that carry off shells and transfer nibs to heating drum, to sizing screens or to barrels. Moves handles to adjust blower airflow to ensure thorough separation of shells from nibs. Loads barrels of nibs onto hand truck, weighs barrels and records weight. Moves barrels to storage area.

May turn hand wheels to adjust roller pressure to obtain uniform-sized nibs.

8229-290 COCOA-BUTTER FILTERER(confection.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: H 4 7

Tends filter press to separate impurities from cocoa butter:

Reads pressure gauge, adjusts pressure control and actuates pump that forces unrefined cocoa-butter through filter plates or screen to separate impurities from cocoa butter. Opens valve and transfers refined cocoa butter to storage. Releases pressure on filter press and unclamps door of filter to remove screen. Flushes screen and interior of press to remove residue, using water or steam hose and scraper. Transports bags of residue to disposal area.

8229-294 CHOCOLATE-PROCESSING HELPER(confection.) DPT:686
GED: 2 SVP: 2 EC: I 3 4 5 PA: H 4

Assists other workers in processing cocoa beans, chocolate and cocoa products, performing any combination of following duties:

Transports ingredients from storage to production area, using hand truck. Weighs ingredients as directed. Loads oven to char cocoa beans, monitors thermometer and clock, and notifies foreman of variances from specified roasting temperature and time. Actuates lever to discharge roasted beans upon signal and examines beans for dryness and colour. Starts conveyors to transfer cocoa-bean shells from cracker and fanner to shell-cleaning machines, or to transfer cleaned nibs (cracked-roasted-cocoa beans) to storage. Examines shells for presence of nibs, and dumps shells into machines to recover nibs. Removes cocoa cakes from cocoa press and stacks them on pallets for removal to storage area. Positions filled mould pans of chocolate on conveyor moving through cooling tunnel. Feeds chocolate cakes or sheets into

shaker and hammer mill or crusher to break chocolate into smaller pieces. Feeds one or more processing units, such as conching machine, liquor mills, and bean roaster and cleaner. Receives and pumps shipments of milk into storage tanks. Cleans processing equipment and work areas, using hot water hose, brush and squeegees. See also definition for term title, 01-160 HELPER (any ind.).

May be designated according to processing activity assigned; for example,

Cocoa-Bean-Roaster Helper
Cocoa-Nib-Grinder Helper
Cocoa-Press-Mill Helper

May test batch fluid with viscosimeter, hydrometer or refractometer to verify viscosity, specific gravity or sugar content. May start pump and open valve to transfer cooked contents to holding tank. May check kettles for cleanliness and ensure that plugs and screens are in place. May mix ingredients prior to cooking. May tend equipment that fills, caps, labels and seals containers. May be designated according to material cooked; for example,

Cook, Fish
Cook, Fruit
Cook, Jelly
Cook Juice

Other Food, Beverage and Related Processing Occupations
8229-314 through 8229-499

8229-314 VINEGAR MAKER(can. & preserv., n.e.c.) DPT:662
vinegar technician.

GED: 3 SVP: 6 EC: I 7 PA: M 2 3 4 5 7

Controls equipment, such as fermentation tanks, acetators, generators, filters and pasteurizers used to produce vinegar from alcohol:

Obtains alcohol for processing by one of the following methods. 1. Ferments apple juice to make hard cider used for making cider vinegar. 2. Cracks and soaks malted barley to obtain wort for making malt vinegar. 3. Requisitions grain alcohol from bonded warehouse or orders wine to make white and wine vinegars. Pumps specified quantities of alcohol, acetic acid, water, mineral salts and bacterial agent into acetators or into vinegar-generators and sets controls to begin production of vinegar. Adjust valves to regulate flow of air entering mixture and sets thermostat to control temperature of mixture. Tests strength of vinegar by performing titration tests on mixture at specified intervals, and pumps product to holding tanks. Sets temperature control on pasteurizing equipment and pumps vinegar from holding tanks through filters and pasteurizers into storage tanks. Dilutes vinegar to consumer specifications by pumping specified quantity of water into tank, and tests acidity of finished product, using hydrometer. Arranges for release by government officials, of alcohol from bonded storage, and for transfer of processed vinegar to receiving tanks. Records production data and amount of alcohol used in log book. Directs other worker in performing duties such as cleaning tanks and filters, and filling shipping containers with vinegar.

8229-318 RETORT-BATTERY COOK(can. & preserv., n.e.c.) DPT:667
cook, canned goods.

GED: 3 SVP: 5 EC: I 6 PA: L 4 7

Observes battery of retorts used in pressure cooking sealed canned goods to ensure proper functioning, and examines canned food for conformity with standards:

Patrols battery of retorts and observes temperature and level of cooking water. Directs other worker to immediately remove cans from retorts on completion of cooking to prevent over cooking and to maintain continued production. Examines cans for air tightness, and accuracy and legibility of code numbers. Sends sample cans to laboratory for analysis. Tags faulty batches of canned goods to ensure removal from product distribution system. Records daily production data, and variances found in sealing, cooking and sterilizing operations.

May monitor operation of battery of sterilizers.

8229-322 COOK, KETTLE(can. & preserv., n.e.c.) DPT:682
cook, pressure.

GED: 2 SVP: 6 EC: I 6 PA: M 4

Cooks foods such as fruits, vegetables, meats, condiments, or fish products, preparatory to canning, extraction of byproducts or preserving:

Weights or measures ingredients according to recipe using scale of graduated container. Loads ingredients into kettle or pressure cooker. Observers thermometer and gauges and turns valve to admit steam to pressure cookers, or lights gas burner or turns switch of heating control, to heat and cook contents of kettles. Stirs mixture in kettle to blend and to prevent scorching of contents, using hand or power-driven paddles. Observes process to ascertain completeness of cooking. Tilts, or scoops contents of kettle into container to unload cooked product.

8229-326 DRYING-DRUM TENDER(dairy; distill., brew. & ferment.; food & bev., n.e.c.) DPT:685
GED: 3 SVP: 4 EC: I 3 6 7 PA: H 4 7

Tends machines that dry liquid foods such as milk, malt or yeast, in preparation for grinding into powdered products:

Turns valve to control flow of steam to heat drum type driers and monitors thermometers and pressure gauges to maintain temperature and pressure within specifications. Installs and adjusts scraper blades on drums, and screens on conveyor system. Starts driers and turns valve to regulate flow of food material between revolving drums. Observes thickness and colour and feels dried material to judge moisture content. Turns screws to adjust drum speed and thickness of sheet of material to ensure specified dryness is attained. Adjusts scraper blade that removes dried material from drum. Moves control to start conveyor to carry dried material to grinding mill, weighing and bagging unit or storage bin. Cleans lines and equipment, using steam or air hose.

May tend centrifuge to remove excess moisture from material before start of drying cycle. May pump or pour specified additives into material prior to drying and record amount added to mixture. May be designated according to type of food material dried, for example, Malt-Drier Tender(distill., brew. & ferment.)

Milk Drier(dairy)

Yeast-Drier Tender(distill., brew. & ferment.; food & bev., n.e.c.)

8229-330 PEANUT-BUTTER MAKER(food & bev., n.e.c.) DPT:685
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Tends variety of machines and equipment to dehydrate, blanch, grind and mix shelled peanuts to manufacture peanut butter, performing any combination of following duties:

Loads shelled peanuts into machine hoppers. Starts equipment, such as heater, blower, conveyor, and blanching machine to prepare peanuts for grinding. Inspects samples for dryness and skin removal, visually, by touch or using moisture indicator. Open valves to fill mixing or grinding chambers with roasted nuts and specified amounts of other ingredients, such as peanut oil and salt. Observes gauges to determine if temperature in chambers is within specified limits. Turns dial control to regulate speed of pumps which force mixture through grinders. Open valves to allow mixture to flow from one grinder to another to obtain specified texture and transfer mixture into cooling unit. Records quantities of materials, such as salt, sugar and peanut oil, used in production, and requisitions required supplies.

May obtain samples and perform periodic chemical tests to determine salt content of product. May direct activities of workers engaged in filling, labelling, capping and packing containers for shipping. May replace sandpaper covered spindles in blanching machine and perform minor maintenance duties. May tend a particular type of machine and be designated accordingly; for example, Blanching-Machine Tender, Peanuts Drier Man, Peanuts

8229-334 CORN-SYRUP MAKER(food & bev., n.e.c.) DPT:682
GED: 2 SVP: 4 EC: I 6 PA: M 4

Controls steam-heated vats to heat and mix ingredients required to make table corn syrup:

Weights specified ingredients, such as corn syrup, flavourings and sugar, according to chart and using scales. Dumps ingredients into mixer. Starts agitators and pumps to transfer mixed ingredients to steam-heated mixing vat, filled with measured amount of thick corn syrup. Observes thermometer and turns steam valve to maintain mixture at specified temperature. Forwards sample of syrup to laboratory for colour and specific gravity testing. Adds caramel or

water as specified to adjust colour or specific gravity of batch. Starts pumps to transfer batch to storage or packaging station. Cleans equipment and work area, using cleaning materials and utensils.

8229-338 MALT ROASTER(food & bev., n.e.c.) DPT:682
ovenman.

GED: 3 SVP: 3 EC: 1 PA: M 4 7

Controls gas-fired rotary ovens and related equipment to roast barley malt, according to specifications:

Regulates gas valves to heat ovens to required temperature. Opens slide gate of overhead hopper to load specified amount of malt into oven, and presses switch to start rotation of oven. Sets automatic timers as specified for roasting cycle. Observes remote-reading oven gauges to ensure that specified temperature is maintained. Stops rotation of oven near end of cycle, and removes sample of roasting malt, using scoop. Manually grinds sample and compares malt with colour of quality-control specimen to ascertain progress of roasting process. Resumes roasting cycle until process is complete and turns off heat. Opens water valve at end of cycle to drench malt in rotating oven. Opens oven and transfers malt by conveyor to cooling tubs and to cleaning and drying machines.

8229-342 SYRUP MAKER(food & bev., n.e.c.) DPT:585
GED: 3 SVP: 3 EC: 1 5 6 PA: H 4 7

Tends equipment to mix ingredients and make syrups and flavourings according to formulas:

Determines quantities of ingredients required to make specified quantity of syrup of designated specific gravity, using charts and formulas. Dumps sugar and flavouring ingredients and admits water into mixing vessel, and starts mixer to blend syrup. Observes thermometer and gauges, and opens valve to admit steam into jacket of mixer to invert sugar, eliminate air and sterilize syrups. Tests sugar content of syrup, using hydrometer or refractometer and dumps syrup to storage tank. Records amounts of syrups, extracts or flavourings produced and materials used.

May extract vanilla flavouring from ground vanilla beans and blend with sugar-base syrup. May be designated according to equipment used or according to product made; for example,

Extract Maker
Flavour Girl
Food-Colouring Maker
Syrup Blender
Syrup Filterer

8229-346 HONEY PROCESSOR(food & bev., n.e.c.) DPT:
685 GED: 3 SVP: 3 EC: 1 PA: M 4

Tends equipment that pasteurizes and filters liquid honey, and seeds it with crystals to form crystallized honey for use as food spread:

Turns valves to admit honey from blending tanks to pasteurizer and to adjust and control temperature of pasteurizer and cooler. Installs pads in filter press and secures them in position. Starts pumps and adjusts pressure to force honey through filter and transfer it to bottling machine or cooling vats. Pours container of honey crystals into vat of honey, and switches on electrical agitators to induce controlled crystallization. Opens valve to fill containers with processed honey.

8229-350 INSTANTIZER TENDER(dairy; food & bev., n.e.c.)
DPT:685

agglomerator tender.

GED: 2 SVP: 4 EC: 1 5 PA: M 4 7

Tends hydrating, mixing and drying equipment to make instant-powdered foods, such as desserts, drinks and dairy or breakfast foods, using either of following methods:

1. Turns steam supply valves and actuates controls to start fans that heat drying chamber to specified temperature, and to supply steam to hydrating jets. Starts conveyors and shaker screen. Turns feeder dial to transfer powdered ingredients from feeder hopper through steam spray, drying chamber and vibrating screen into storage hopper. Adjusts steam valves and feed rate to maintain specified powder flow and moisture content. 2. Positions sizing rolls on conveyor, using wrench, to crumble dried powder to specified size. Starts pumps, turns valves and monitors flow meter to spray water into hydrator at specified rate. Starts blower to push powdered ingredients from storage hopper through water spray agglomerator and onto conveyor loading to drying unit and sizing rolls. Adjusts valves and observes

thermometer. Feels powder for moisture content and visually examines it for charring.

May be designated according to product made; for example, Casein Maker(dairy)

Instant-Breakfast Maker(food & bev., n.e.c.)

8229-354 POTATO-CHIP FRYER(food & bev., n.e.c.)
DPT:685

GED: 2 SVP: 4 EC: 1 4 PA: L 4 7

Tends machines that wash, slice, press, fry and salt potatoes to make wafer-thin potato chips:

Opens valve to pump preheated oil into cooking vats, fills hopper with salt and adjusts cooker temperature controls. Adjusts slicer controls, and turns valves of washer unit. Starts conveyor which carries potatoes through slicing and washing units into hot fat. Moves levers to adjust conveyor speed and control rate of flow of potato slices into vats. Stirs potato slices to ensure uniform cooking, using paddle or automatic reciprocating rakes. Removes cooked chips from conveyor and examines them to verify colour, thickness and saltiness. Replaces worn blades and slicing heads, using hand tools.

May cook chips by lowering filled wire basket into frying vat.

8229-358 RETORT TENDER(can. & preserv., n.e.c.; fish
process.; slaught. & meat pack.) DPT:685
food pasteurizer; steam-oven operator.
GED: 2 SVP: 4 EC: 1 4 6 PA: M 4

Tends steam oven or retort to cook canned or fresh foods, such as vegetables, fruit, meat and fish, or to pasteurize bottles of pickled foods:

Pushes racks of food into oven chamber, or lowers baskets or canned or bottled foods into chamber of retort, using hoist. Closes door or lid of chamber and turns latches to seal chamber. Turns valves to admit steam or hot water to cooking chamber, observes dials and thermometers and adjusts valve settings to control temperature, pressure and cooking time as specified. Turns valves to release steam and to admit cooling water into chamber at end of cycle. Opens door and moves product from chamber to conveyor for further processing, such as cooling, draining, canning and labeling.

May operate vacuum pump to remove air from sealed retort chamber. May record quantities and kinds of food processed. May clean work area and equipment, using water hose and long handled brush.

8229-362 Caramel-EQUIPMENT OPERATOR(food & bev.,
n.e.c.) DPT:682
GED: 2 SVP: 3 EC: 1 6 PA: H 4 7

Controls equipment to process liquid sugar to produce caramel flavouring material:

Turns valves and starts pumps to fill cooking tanks with liquid sugar. Adds specified amounts of salts or caustic solution. Observes thermometers and gauges and turns valves to regulate steam pressure and temperature in cooking tanks. Admits measured quantity of water to arrest chemical action. Draws sample of solution and sends to laboratory for analysis. Verifies solution colour, using colorimeter. Reads test results. Turns valves and starts pumps to transfer material to evaporator feed tanks, filter supply tanks, blending and storage tanks or to fill shipping containers. Weighs and records weight of filled shipping drums. Cleans work area, using cleaning brush and water hose.

8229-366 COOK, VACUUM KETTLE(can. & preserv., n.e.c.)
DPT:665
GED: 2 SVP: 3 EC: 1 4 7 PA: M 4

Tends vacuum-cooking equipment to cook fruit and other ingredients to make jams and jellies according to formula:

Observes thermometer, sets switch or valve controls, or lights burners to prepare vacuum cooker and heat mixing kettle to specified temperature. Turns valves to transfer contents of kettle into vacuum cooker. Observes refractometer on cooker to determine sugar content. Adds ingredients, such as pectin solution, according to formula, and stirs fruit and ingredients, using paddle. Places container under discharge outlet of distillation jacket of cooker to reclaim esters. Opens valve or starts pump to transfer contents of vacuum cooker to holding or filling-machine tanks. Directs other workers in mixing pectin solution and in dumping frozen or fresh fruit and ingredients into mixing kettle.

8229-370 BRINE MIXER(can. & preserv., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: M 4

Tends equipment to make brine and pickling solutions for bleaching and preserving fruit or vegetables, by either of following methods:

1. Opens valve to admit required amount of water into steam cooker as indicated by water gauge. Measures and dumps salt or other preservatives into water. Admits steam into jacket of cooker, observing temperature gauge and regulating heat to maintain boiling for specified period of time. Tests solution for preservative content, using hydrometer or salinometer, and dilutes solutions or adds ingredients to attain prescribed specific gravity. Pumps solution into vat for aging and curing. 2. Turns tap to fill container with specified volume of water. Couples hose to outlet valve of sulphur-dioxide-gas container, using wrench, and lowers free end of hose into water. Opens valve to admit gas into water, reading gauge and chart to obtain specified concentration. Draws and sends sample of brine for laboratory analysis. Transfers brine from storage to pickling tanks.

May prepare lime solution, according to formula, to provide firming agent for cherries. May unload fresh fruit or fruit pulp from trucks for transportation to processing area.

8229-374 MIXER, DRY FOODS(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: H 4 7

Tends mixing machine that blends ingredients to make dry food products such as powdered drinks, gelatin and instant puddings:

Weights and measures out ingredients according to formula, using standard vessels, spatula and scale. Examines ingredients for foreign matter or other defects, and manually dumps them into mixer. Pushes button to start mixer that blends ingredients for specified time. Examines colour of mixture and compares with chart to ensure conformance to standard. Moves lever to dump mixture into packaging-machine hopper. Maintains records of ingredients and batches mixed.

May send sample to laboratory for quality control analysis. May cook ingredients prior to mixing. May be designated according to type of product mixed; for example,

Breakfast-Drink-Powder Mixer
Chocolate-Drink-Powder Mixer
Gelatin-Powder Mixer
Soft-Drink-Powder Mixer
Soup-Powder Mixer

8229-378 PULPER TENDER(can. & preserv., n.e.c.) DPT:685
juice extractor.
GED: 2 SVP: 3 EC: I PA: M 4

Tends equipment that crushes fruit to extract juice, or removes seeds from fruit pulp preparatory to making jams or jellies:

Examines fruit stock to ensure quality and removal of foreign material. Places containers under discharge outlets of extractor to receive juice, pulp, or seeds and pits. Dumps fruits, berries or tomatoes into hopper and starts machine. Observes juice or pulp flowing from outlets for consistency, fibre content, seeds and pits, and adjusts machine, using wrench. Removes filled containers from machine.

May clean and sterilize pulping equipment, using steam hose. May measure out pulp and add specified ingredients preparatory to boiling for jams. May tend chopper that forms tomato-pulp mass, and pump material through heated lines of pasteurizer to extractor or homogenizer machines that make tomato juice. May be designated according to product made; for example,

Apple-Juice Maker
Apple-Sauce Maker
Jam-Process Man
Tomato-Juice Extractor

8229-382 EGG BREAKER(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends machine that breaks eggs and separates yolks from egg whites:

Opens containers and feeds eggs into egg-breaking machine that automatically breaks eggs and dumps contents into individual cups. Observes eggs for specified yolk colour or signs of off-standard condition before cups enter separator. Trips cup lever to drop off-standard yolk into bucket as egg white passes into separator, or stops machine and removes cup and discards defective egg.

May break eggs manually by striking eggs against metal bar prior to separation. May lift pallet containing cases of eggs to working

position by depressing pedal of hoisting device. May remove empty cases and stack them manually.

8229-386 CENTRIFUGE TENDER(food prep., n.e.c.; can. & preserv., n.e.c.) DPT:685
extractor operator; separator operator.
GED: 2 SVP: 2 EC: I PA: M 4

Tends centrifugal extractors to separate food particles held in liquid suspension or to remove excess fluids from foods during processing:

Turns valves or starts conveyor to transfer liquid or solid food materials from storage to centrifugal extracting or separating machine. Sets timer and turns switch to start centrifuge. Takes sample of separated fluid or solid residue and examines for clarity, or tests viscosity, or feels residue to determine if separation is complete.

May adjust flow of incoming liquids to ensure optimum separation on continuous-flow equipment or to avoid overloading centrifuge. May be designated according to type of product separated; for example, Broth Separator(food prep., n.e.c.)

Tomato-Puree Extractor(can. & preserv., n.e.c.)

8229-390 CONTAINER WASHER, MACHINE(any ind.) DPT:685
GED: 2 SVP: 2 EC: I 4 PA: M 4 7

Tends machine that cleans and sterilizes food containers preparatory to filling:

Turns valves to fill washing and sterilizing tanks with water and adjusts steam pressure to regulate temperature in cleaning tank. Dumps specified amounts of chemicals, such as caustic soda into cleaning tank. Loads containers on conveyor passing through cleaning and sterilizing tanks. Examines containers for cleanliness and defects such as dents and cracks. Keeps machines and work area clean and lubricates equipment.

May wash containers manually prior to machine washing, using water, detergent and sponge. May push loads of empty containers to and from washer, using hand cart. May be designated according to type of container cleaned; for example,

Barrel Washer
Bottle Washer
Can Washer

8229-394 COOK, FRY, DEEP FAT(can. & preserv., n.e.c.) DPT:685
 fry cook.
GED: 2 SVP: 2 EC: I 3 6 PA: M 4

Tends deep fat cookers to fry meats, vegetables, fish or other foods in cooking oil:

Empties containers to fill cookers with oil. Sets thermostat and timer to heat oil as specified. Empties containers of food, such as fish, meat, or vegetables into basket and immerse basket in cooker manually, or using automatic lowering device. Observes colour of food at end of frying time to ensure conformity with standards and extends frying time accordingly. Removes basket from cooker, drains and dumps contents onto tray.

May dip food into batter before frying. May skim and strain oil, and verify temperature of cooking oil, using thermometer. May fry foods for canning or freezing. May fry a particular food product and be designated accordingly; for example,

Fish-and-Chips Cook
Potato-Pancake Fryer

8229-398 CUTTER, FROZEN MEAT(fish process.; slaught. & meat pack.) DPT:685
cutter, frozen fish; sawer.
GED: 2 SVP: 2 EC: I 6 PA: H 4

Tends electric saw that cuts frozen fish or meat into slices preparatory to packaging, cooking or grinding:

Transports cartons of frozen food from freezer to work area, using hand truck or hydraulic lift. Opens cartons, using knife, and removes protective wrapping. Dumps cartons of frozen food onto cutting table. Starts saw or hydroslicer by pressing switch. Positions food manually into path of blade, using back guide to regulate thickness of cut.

8229-402 FOOD-MIXING-MACHINE TENDER(can. & preserv., n.e.c.; confection.; food & bev., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 4 6 PA: H 4

Tends machine that mixes food ingredients for subsequent processing: Weighs out and measures ingredients, using platform scale and measuring containers. Loads measured quantities of ingredients into mixer, using bucket, conveyor or bucket hoist, or by opening valves. Starts mixer and observes operation to ensure thorough blending. Pulls lever to tilt and empty mixer, or uses scoop to empty mixer into chute, hopper or container. Records mixing time and batch number on record card at end of mixing cycle. May heat ingredients to specified temperature prior to mixing, and cool mixture as required. May be designated according to type of product mixed; for example, Candy-Dough Mixer(confection.) Canned-Luncheon-Meat Mixer(can. & preserv., n.e.c.) Roux Mixer(can. & preserv., n.e.c.)

8229-406 FOOD SLICER(dairy; slaught. & meat pack.) DPT:685
GED: 2 SVP: 2 EC: I 2 6 PA: M 4

Tends one or more machines that automatically slice food products, such as cheese or meats, for packaging: Threads roll of interleaf paper into machine to separate portions. Adjusts guides on machine for size of food slab, using wrench. Positions slab on feeder bed or hopper. Turns dial control knob to set number and thickness of slices. Presses levers to clamp slab of food to bed and start feeding mechanism. Presses switch to start rotating slicer equipped with synchronized devices that cut, count, interleave and stack food slices. Places sliced stack on conveyor for packaging. Checks weight of stack of slices and resets thickness dial to obtain slices of prescribed weight. Interchanges imperfect slices or adjusts weight of stack with slices from spare piles. May transport food slabs to slicing machine. May tend press to compress and square off slabs of meat for slicing, or may grade bacon slices onto cards for further processing. May be designated according to type of food product sliced; for example, Bacon Slicer(slaught. & meat pack.) Cheese Slicer(dairy) Smoked-Meat Slicer(slaught. & meat pack.)

8229-410 PRESERVATIVE-DISPENSING-MACHINE TENDER(can. & preserv., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that automatically dispenses preservatives such as brine, oil, salt or syrup into food containers prior to lidding or capping: Fills machine reservoirs with specified preservative solution. Presses button to start machine and turns valves to allow flow of solution. Feeds or guides containers, manually, onto conveyor that carries them under dispensing nozzles. Observes filling operation and adjusts flow of solution or material to specified volume.

8229-414 TUMBLER TENDER(food & bev., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 6 PA: L 4

Tends machine to season food products such as nuts or potato chips: Dumps food product into drum of machine and starts motor that rotates drum. Scoops pre-mixed seasoning from container and sifts over food product, using measuring cup. Stops machine after specified time and tilts drum to dump seasoned product into container, onto conveyor for further processing or into hopper of bagging machine.

8229-418 VINEGAR-MAKER HELPER(can. & preserv., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 4 PA: M 4

Helps vinegar maker to tend equipment to produce vinegar by performing any combination of the following duties: Opens valves and starts pumps to move fluid ingredients from storage tanks into conversion or fermentation generators. Adds specified quantity of fluid or powdered yeast to alcohol or apple juice in processing tanks. Tests strength of vinegar using hydrometer, and records test results. Dumps specified amounts of filtering material into

vinegar-processing tanks, and opens air valve to disperse filter agent throughout contents of tanks. Removes vinegar samples at various stages of production for laboratory analysis. Cleans tanks and filter units, using water hose, brushes and squeegee or shovel. See also definition for term title, 02-160 HELPER (any ind.)

8229-422 CANNERY WORKER(can. & preserv., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Performs any combination of the following tasks in canning, freezing, preserving or packing food products: Dumps or places food products in hopper, on sorting table, or on conveyor. Sorts or grades products according to size, colour, or quality. Feeds products into processing equipment such as washing, refrigerating, peeling, coring, pitting, trimming, grinding, cooking or slicing machines. Trims, peels and slices products, using knife or paring tool. Feeds empty containers onto conveyor or forming machines. Fills containers using scoop or filling form, or packs by hand. Counts, weighs, or tallies processed items according to specifications. Inspects and weighs filled containers to ensure product conforms with quality and weight standards. Places filled containers on trays, racks or into boxes. Loads, moves or stacks containers or products on trays, conveyors or hand trucks for transportation to storage or freezing areas. May be designated according to specific task assigned; for example, Blender Dipper Filler Stirrer

8229-426 FROZEN-DINNER PREPARER(cater. & lodg.; can. & preserv., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I 2 3 4 PA: M 4

Assembles pre-cooked dinners, meat pies, desserts and other convenience or specialty foods for freezing, performing any combination of following duties: Places tray of sliced meat, fish or seafood near conveyor. Fills supply hoppers of food-dispensing machine with specified prepared foods such as cooked vegetables, gravy, dessert and sauce. Stacks supply of trays and foil covers in machine. Starts conveyor which carries trays under dispensers which automatically deposit portions of food into recesses in tray. Adds to portions that appear scanty. Places specified kind and number of meat slices or pieces of seafood into tray by hand as filled tray passes to mechanism which automatically crimps on foil cover. Places tray into package and into shipping carton. Transports filled carton into deep freezer, using dolly. Removes and weighs samples of trays to ensure conformance to weight specifications. May prepare foods for baking and freezing by placing specified foods into tray by hand and crimping foil cover around edges of tray, using hand crimping device. May be designated according to item prepared; for example, Frozen-Pie Maker(can. & preserv., n.e.c.)

8229-430 COOK HELPER(can. & preserv., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: I 4 PA: H 3 4

Helps other workers to cook food products such as juices, meats, soups, fruits or preserves, in large quantities before canning or preserving, performing any combination of following duties: Weighs or measures ingredients; such as, sugar, salt, meat, lard, fruit, vegetables, rice, spices or vinegar according to formula, using platform scale, weighing hopper and measuring containers. Transfers materials to cooking area by hand or hand truck. Turns valves to admit steam to cooking-kettle jacket and dumps ingredients into kettle for melting or thawing and cooking. Stirs contents in cooking kettle and skims off foam or foreign material, using paddle, ladle or spoon. Positions sieve under kettle outlet and tips kettle to dump contents onto sieve to drain off water. Stirs contents to facilitate cooling and drainage. Dumps or places ingredients into containers on scale to obtain weight. Pushes wheeled containers of food to cooking or mixing area. Stacks or tallies containers. Reheats uncooked food in kettle. Cleans kettles, containers, utensils and work area, using water, steam, detergents, brushes and scouring pads. Pours samples of cooked food into bottles for quality control testing. May be designated according to product cooked; for example, Cook Helper, Fruit Cook Helper, Juice Cook Helper, Soup

8229-434 FOOD-PROCESSING-EQUIPMENT

CLEANER(food & bev., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: 1 4 5 6 PA: M 2 3 4

Cleans, greases and oils food processing and packaging equipment: Cleans interior surface of kettles and other equipment that process and package foods; such as, candy, jams, jellies, peanut butter and puddings, using water hose, cleanser, sterilizing agent, solvents and rags. Opens drain valve and flushes out cleansers and food particles through drain, using hose. Greases and oils equipment, using hand-grease gun, oil containers and wrenches.

8229-438 FREEZER MAN(can. & preserv., n.e.c.; fish process.)

DPT:687

GED: 2 SVP: 2 EC: 1 2 PA: H 4

Moves racks of food packages into and out of freezing room, performing any combination of the following duties: Transfers racks filled with food packages into and out of freezer room for freezing or chilling, using electric pallet mover or hand cart. Pushes hand cart over scale and records weight prior to freezing. Unloads trays from racks and inserts trays on shelves of freezing unit. Records identifying data such as, brand name, package sizes and time

of entry into freezing room. Feels packages at specified time to test solidity of freeze. Notifies supervisor when specified quotas are filled, and when temperature fluctuates, or outside air leaks in freezing compartments are detected. Pulls racks from freezer room, using power winch, when wheels are frozen, and transfers and unloads trays in packing and freezing areas. Loads containers on belt conveyor and adjusts speed of conveyor through quick freezer. Loads food such as fish fillets on plastic sheets and places between plates on plate-type-quick-freezer and actuates compression unit by pushing button to maintain shape of food package during freezing.

8229-499 MISCELLANEOUS FOOD, BEVERAGE AND RELATED PROCESSING OCCUPATIONS

This group includes food and beverage processors and related workers, not elsewhere classified; for example, those who tend machines that separate damaged nuts from whole nut meats, tend environmental equipment to control ripening of bananas, tend equipment to dry and bale seaweed, and act as relief operators on various food processing units. Typical examples of occupational titles covered by this residual group definition are:
Banana Ripener(whole. trade)
Chocolate-Production-Relief Operator(confection.)
Electric-Sorting-Machine Tender(confection.)
Seaweed Drier(food & bev., n.e.c.)

823-WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP

This minor group includes occupations concerned with removing bark from logs and sawing or splitting logs to produce rough lumber, cooperage stock, shingles and shakes; planing rough lumber into dressed stock of various sizes; manufacturing plywood and wood conglomerates; removing moisture to season or condition lumber and related materials; treating wood with preservatives and fire- retardants; and inspecting, testing, grading and scaling lumber and related materials. Occupations concerned with converting cellulose materials into paper pulp are classified in Minor Group 825, PULP AND PAPERMAKING AND RELATED OCCUPATIONS. Occupations concerned with fabricating, assembling and repairing finished products made from wood stock are classified in Minor Group 854, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS. WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP are classified in the following unit groups:

- 8230 Foremen: Wood Processing Occupations,**
Except Paper Pulp
- 8231 Sawmill Sawyers and Related Occupations**
- 8233 Plywood Making and Related Occupations**
- 8235 Wood Treating Occupations**
- 8236 Inspecting, Testing and Grading**
Occupations: Wood Processing, Except
Paper Pulp
- 8238 Occupations in Labouring and Other**
Elemental Work: Wood Processing,
Except Paper Pulp
- 8239 Wood Processing Occupations, Except**
Paper Pulp, n.e.c.

8230-FOREMEN: WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in sawing and preparing lumber and related materials; manufacturing plywood and producing wood conglomerates; inspecting, testing, grading and scaling lumber; and treating wood with preservatives and fire-retardants.

8230-110 FOREMAN, INSPECTING, TESTING AND GRADING OCCUPATIONS, WOOD PROCESSING (sawmill; veneer & plywood; woodworking) DPT:138

Supervises and co-ordinates activities of workers engaged in inspecting, testing and grading lumber and wood products; such as, shingles, poles and plywood, (Unit Group 8236): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Lumber Grading(sawmill; woodworking)
Foreman, Plywood Inspection(veneer & plywood)
Foreman, Treated-Pole Testing(woodworking)

8230-114 FOREMAN, LABOURERS AND OTHER ELEMENTAL WORKERS (sawmill; veneer & plywood; woodworking) DPT:138

Supervises and co-ordinates activities of labourers and other elemental workers engaged in feeding, offbearing and handling activities in the processing of lumber, shingles, plywood and wood conglomerates in a sawmill, shingle mill, plywood mill or lumber yard, (Unit Group 8238):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Lumber Yard(woodworking)
Wood-Crew Foreman(sawmill)

8230-118 FOREMAN, PLYWOOD MAKING AND RELATED OCCUPATIONS(veneer & plywood) DPT:138

Supervises and co-ordinates activities of workers engaged in operating, tending and feeding machines that peel, slice, glue, press and trim veneer, core and face sheets to produce veneer and plywood panels, (Unit Group 8233):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Gluing
Foreman, Peeler Room
Foreman, Veneer

8230-122 FOREMAN, SAWMILL SAWYERS AND RELATED OCCUPATIONS(sawmill) DPT:138

Supervises and co-ordinates activities of workers engaged in operating and tending sawing and splitting equipment in mills to produce lumber, shakes and shingles, and cooperage stock, (Unit Group 8231):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Shingle Mill

8230-126 FOREMAN, WOOD TREATING OCCUPATIONS(woodworking) DPT:138

Supervises and co-ordinates activities of workers engaged in operating and tending machines and equipment to season or condition wood; treat wood retardants; and to produce wood conglomerates, such as particle board, hardboard, and artificial fuel-logs, (Unit Group 8235):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Hardboard
Foreman, Particle Board
Foreman, Pole Yard
Foreman, Treating Plant

8230-199 OTHER FOREMEN, WOOD PROCESSING OPERATIONS

This group includes wood processing foremen, not elsewhere classified; for example those who supervise and co-ordinate activities of workers engaged in operating and tending machines to remove bark from logs and poles, and to reduce logs to excelsior, flakes, chips, log fuel or wood flour; screening wood chips; feeding saws by guiding and positioning cants, slabs or lumber on roller tables in a sawmill; and tending machines that saw pressed board or plywood sheets into panels of specified size.

Typical examples of occupational titles covered by this residual group definition are:

Foreman, Chipping and Flaking(sawmill; woodworking)
Foreman, Log Barking and Peeling(sawmill; woodworking)

8231-SAWMILL SAWYERS AND RELATED OCCUPATIONS

This unit group includes occupations concerned with operating and tending lumber-mill equipment to process logs into rough lumber, and to saw, split and plane rough lumber into stock of various sizes, such as dressed dimensional lumber, shingles and cooperage stock. Occupations concerned with milling and machining wood stock in a planing mill, shop or factory, according to specified shape and size to fabricate wooden parts or products, are classified in Minor Group 835, WOOD MACHINING OCCUPATIONS.

8231-110 HEAD-SAW OPERATOR(sawmill) DPT:382 head sawyer. GED: 3 SVP: 6 EC: 1 5 PA: L 4 7

Operates head saw, log carriage and conveyor system to saw logs into rough cants or boards:

Starts conveyor that transfers log to carriage. Observes grade, condition, size and other characteristics of log to obtain optimum lumber production. Activates log turner to align log with saw, and sets saw guides and depth of cut. Starts and controls speed of carriage to force log against saw blade to cut slab. Observes exposed face of log after each cut to determine settings for next cut.

May operate semi-automatic system to saw logs into rough cants or boards, using panel buttons and hand and foot controls. May keep production records. May operate similar equipment to rip logs to smaller size for chipping or slashing in pulp mill wood room. May operate machine that saws logs into cants and simultaneously reduces cuttings into wood chips for pulp mill.

8231-114 EDGER MAN, AUTOMATIC(sawmill) DPT:382 GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Operates multi-blade sawing machine and conveyor system from panelboard to straighten edges of rough lumber and to saw lumber into boards of specified widths:

Starts conveyors to move lumber to feed rollers. Observes lumber as it passes, to determine cuts that will produce boards of optimum size and grade. Presses panel buttons and foot pedals to space saw blades, move outfeed guides to divert lumber to next process and adjust press rolls for thickness of lumber. Starts feed rollers to move lumber through saw.

May change saw blades.

8231-118 TRIMMER MAN(sawmill) DPT:382 GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Operates bank of circular saws to cut defective sections from boards and to trim boards to length:

Scans boards as they move along conveyor to saws to determine cuts that will produce highest grade. Moves levers or pushes buttons to raise or lower one or more saws to trim boards to length or to remove defects, such as rot and splits.

8231-122 GANG SAWYER, CANT(sawmill) DPT:682 GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Operates gangsaw to cut lumber from cants:

Spaces saws to cut specified width of lumber, using hand tools. Moves hand and foot controls to shift cants from chain conveyor table to feed rollers and to align cants with saws. Adjusts tension rollers and controls speed of saws and feed rollers to cut lumber from cants.

May replace saw blades. May record production. May align cants with saw blades, using pickaroon.

8231-126 GANG SAWYER, LOG(sawmill) DPT:682
GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Controls carriage to feed logs to gangsaw that saws logs into lumber: Moves hand and foot controls to transfer logs from conveyor to log carriage. Aligns log with saw blades, by operating controls on panelboard. Advances carriage to feed log into gangsaw and keeps pressure against saw while log is cut, by moving controls on panelboard.

May space saws to vary width of cuts, according to work order, using hand tools. May remove large knots, rocks and nails from log, using axe or chain-saw. May replace saw blades.

8231-130 LUMBER-SIZER OPERATOR(sawmill) DPT:682
planer operator.
GED: 3 SVP: 5 EC: B 5 PA: M 3 4 7

Operates planing machine to dress lumber to specified dimensions: Installs cutting heads on machine drive-spindles and adjusts blade exposure according to specified depth of cut, using wrenches and gauges. Adjusts feed-roll tension and positions fences that guide stock between cutter heads. Starts machine, exhaust blower, and conveyors, and slides timber against guide to align it on feed rolls. Verifies dimensions of sized stock, using gauge or rule. May sharpen cutting blades after installation, using stone.

8231-134 LOG-CUT-OFF SAWYER, AUTOMATIC(sawmill) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Controls circular saw and conveyor system from panelboard to saw logs to specified lengths:

Starts conveyor that moves log to sawing position. Observes log to determine number of useable lengths to be cut and presses button on panelboard to lower saw that trims and squares log ends. Cuts log to specified lengths by registering length specification on control panel of machine that automatically measures log, starts conveyor and lowers saw to cut log when log reaches selected position. Starts discharge conveyor to transfer log to other work stations. May record production.

8231-138 LOG-CUT-OFF SAWYER(sawmill) DPT:685
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Tends circular or chain saw that cuts logs into prescribed lengths: Observes log to determine number of useable lengths to be cut. Starts conveyor that moves log beside footage markings and stops conveyor when specified footage reached. Presses button or moves lever to lower saw that cuts prescribed length from log. Starts discharge conveyor to transfer log to other work stations.

May record production. May tend saw at edge of pond to cut logs into usable length or diameter. May set log stops that determine length of log to be cut, by pressing buttons or moving levers on panelboard. May saw timbers to prescribed length and be designated accordingly, Timber-Cut-Off Sawyer

8231-142 TRIMMING-MACHINE OPERATOR(sawmill) DPT:685
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Tends double-ended trimming machine to saw several pieces of lumber simultaneously into identical lengths:

Stacks boards in trimming machine, butts ends against guide blocks, and moves lever to clamp boards in machine. Sets movable saw to specified or optimum distance from stationary saw for standard board length or most profitable utilization of material. Starts saws by pressing switch. Places sawed lumber on conveyor. May mark boards individually to indicate size and grade, using chalk or marker.

8231-146 SHAKE SPLITTER(sawmill) DPT:685
GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Tends pneumatic machine that slices wooden bolts into blanks or shakes: Positions bolt against stops on machine table under knife blade. Depresses foot pedal to activate guillotine-type blade and repeats operation until entire bolt has been sliced. Adjusts stops for off-

standard thicknesses of shakes, using wrench. Replaces dull or worn blade as required, using wrench.

8231-150 EDGER MAN(sawmill) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: M 4 7

Tends multiple-blade sawing machine to straighten edges of rough lumber and to cut boards into specified widths:

Lays board on edger table and moves levers to space saw blades or guides so that boards of optimum width will be cut from rough board. Pushes board into feed rolls to straighten edges, and to saw board into desired width.

May start and stop conveyors to control flow of wood to edger table. May change saw blades and guides.

8231-154 SHINGLE SAWYER(sawmill) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: H 4 7

Tends machine to saw wooden blocks into shingles:

Examines grain of block to determine best cutting face, and lifts and places block in machine carriage. Presses pedal to start carriage moving back and forth to feed block against rotating saw that cuts shingles. Turns block in carriage to change cutting face to obtain maximum utilization of block. Catches shingles as they fall from saw and examines them for defects, such as rot or knots. Trims off defects with table-mounted saw. Tosses shingles into specified bins or containers according to grade.

May adjust carriage for thickness and angle of shingles cut. May change and sharpen saw blades.

8231-158 STAVE-BOLT SAW OPERATOR(sawmill) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends dual powersaw to saw barrel-stave bolts (split sections of logs) into specified lengths and to square their ends:

Adjusts distance between saws. Lays bolt on carriage of dual power saw and starts saws. Pushes carriage between saws, trimming and squaring ends of bolts. Withdraws carriage, removes bolt and places it on conveyor.

8231-162 SCRAP CUT-OFF SAWYER(sawmill) DPT:685
bolter.
GED: 2 SVP: 3 EC: I 5 7 PA: M 4 7

Tends circular saw that cuts slabs, edgings or other scrap wood into pieces suitable for making sawmill by-products, such as laths or fuel: Starts conveyor that moves slab, edging, core or log into cutting position against end stop. Starts saw and moves blade to cut pieces according to requirements.

May set dogs or wedges to hold slab, edging or log in place.

8231-166 SHAKE SAWYER(sawmill) DPT:686
GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Saws blanks (wooden blocks) into shakes, using band rip saw: Pushes and guides blank diagonally through saw that cuts it into two equal shakes. Grades shakes according to quality. Tosses shakes into conveyor chutes, according to grade.

May replace saw bands, using hand tools.

8231-170 BLOCK SAWYER, BARREL ENDS(sawmill) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: H 4 7

Tends saw to cut blocks of wood into boards of specified thickness for heads and bottoms of barrels:

Adjusts guide for desired thickness of board, using wrench and ruler. Places block of wood into position on saw carriage and adjusts clamp to hold it in place. Starts saw, and pushes saw carriage over saw to cut off board of specified thickness. Withdraws carriage and removes board. Repeats cuts until block is completely sawed.

May be concerned with particular sawing activity and be designated accordingly; for example, Bottom-Saw Operator Heading-Saw Operator

8231-174 SPLITTERMAN(pulp & paper; sawmill) DPT:686
block splitter.

GED: 2 SVP: 2 EC: I 5 6 PA: H 4 7

Feeds steam or hydraulic-powered chisel or wedge-shaped ram that splits wooden blocks into bolts or to a size suitable for grinding or chipping.

Positions block on conveyor according to grain, using picaroon. Moves lever or presses button to drop chisel on block or to activate horizontal ram that splits blocks.

May select blocks suitable for splitting into shakes, and drag them to adjacent conveyor, using picaroon. May lift blocks containing knots or rotted areas onto waste conveyor.

8233-PLYWOOD MAKING AND RELATED OCCUPATIONS

This unit group includes occupations concerned with cutting veneer and making plywood. Activities include: operating, tending and feeding machines that peel, slice, glue, press and trim veneer, core and face sheets, and sand and repair veneer sheets and plywood panels.

8233-110 PANEL-SANDING-MACHINE OPERATOR(veneer & plywood) DPT:682

GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates one or more sanding machines to smooth plywood, chip-board or other panels:

Observes gauges and turns handwheel to adjust depth of cut. Starts drums or headrolls, drum oscillators and feed rollers. Synchronizes speed of feed rollers with drum or belt, using handwheels. Sets timers on automatic feeders, hoist, feed wheels and automatic stacker. Pushes buttons, turns handwheels and observes meters to adjust pressure of drums, belts or platens. Aligns feed rollers and drums, or belt rolls, platen and contact bars to produce even thickness of panel. Inspects and replaces worn sandpaper or sanding belts, and maintains supply of abrasive materials. Cleans machines, using air hose.

May replace worn parts, using hand tools. May keep records showing sandpaper or belt changes, machine operating hours, number of panels sanded, or equipment downtime. May be designated according to type of machine operated; for example, Multiple-Drum-Sander Operator Wide-Belt-Sander Operator

8233-112 VENEER-LATHE OPERATOR(veneer & plywood) DPT:682

veneer cutter.

GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Operates lathe to peel veneer from logs:

Adjusts height and angle of knives, elevation of pressure bar and positioning of gears in knife-feeding mechanism according to thickness of veneer to be cut, using hand tools. Activates automatic feeding device or signals worker to position log between chucks of lathe, and pushes lever or button to drive chucks into log. Pulls lever to move knife against log and starts log rotating. Verifies thickness of veneer with gauge or caliper and adjusts knives, pressure bar and gears as required. Controls turning speed of lathe to maintain even peeling according to condition of log. Stops machine and tilts blade away from log when peeling is completed or when machine becomes clogged. Releases peeled log from lathe chucks onto conveyor.

May raise and lower apron to route veneer to empty conveyor trays. May replace dull knives and worn or broken parts, using hand tools. May operate lathe equipped with back-roll impression roller and be designated accordingly, Back-Roll-Lathe Operator

8233-114 PLYWOOD-PANEL GROOVER OPERATOR(veneer & plywood) DPT:682
panel-groover operator.

GED: 3 SVP: 4 EC: I 5 6 PA: M 4 6 7

Operates machine to cut single- or multiple-decorative grooves in plywood panels and to bevel edges of panels:

Selects, installs and secures cutters and spacers on machine-arbor at specified intervals, using hand tools. Adjusts height of table according to depth of groove. Adjusts feed guides, rollers, pressure bars and feeder drag-arm that feed plywood panels to cutter heads or guide cutting heads over stationary plywood, using hand tools. Positions automatic stacker at discharge end of machine. Starts machine and observes operation to detect malfunctions. Observes panels for conformity to specifications and to detect cracks, splits, chips and other surface defects. Feels edges of grooves for smoothness. Changes cutter heads.

May cut grooves in hardboard or particle board panels and may bevel edges of panels, and be designated accordingly; for example, Hardboard-Panel Groover Operator(woodworking) Particle-Board-Panel Groover Operator(woodworking)

8233-116 PLYWOOD PATCHER, HAND(veneer & plywood) DPT:684

panel patcher.

GED: 3 SVP: 4 EC: I 6 PA: M 4 7

Repairs defects, such as splits, knotholes, hairline cracks and torn grain, in plywood panels:

Inspects panels visually for defects and determines type of repair needed. Fills minor defects with colour-matched plastic filler, using caulking gun and putty knife. Cuts out major defects, using portable tools, such as router or powered hand-saw. Inserts shaped and colour-matched glued patches, using mallet and masking tape, or electrically-powered press to bond patches to panel. Removes excess wood filler and glue. Cuts colour-matched strips of wood in variety of lengths and widths to be used as patches, using bench power-driven saw.

May mark blistered panels for further processing by dyeing edges.

8233-118 VENEER-SLICING-MACHINE OPERATOR(veneer & plywood) DPT:684

GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates machine to slice veneer strips from flitches (squared log sections):

Examines flitch for defects and to determine grain pattern. Cuts defects from surface of flitch, using chisel and mallet. Positions flitch with selected grain pattern toward knife. Adjusts machine to slice veneer to specified thickness. Starts machine and verifies thickness, using gauge or caliper. Replaces dull knives, using hand tools.

8233-122 HOT-PLATE-PRESS TENDER(veneer & plywood) DPT:565

GED: 3 SVP: 4 EC: I 6 PA: M 3 4 7

Tends hot-plate press that bonds glue-coated veneer sheets together to form plywood:

Turns valves on control panel to regulate pressure and temperature of press. Raises and lowers hydraulically operated plywood loader to load press, using foot pedal. Loads press manually, assisted by helper. Presses button controls to bring plates of press together and subject veneer sheets to temperature and pressure that bond them to form plywood. Presses button controls to partially eject plywood panels from press to facilitate manual transfer of panels to unloading hoist. Raises and lowers hoist to unload plywood, using foot pedal. Works with helper to unload press manually. Cleans glue from press plates and debris from working area. Records data, such as quantity, panel dimensions and panel thickness on hot-plate-press report.

8233-126 VENEER MATCHER(veneer & plywood) DPT:684
book matcher.

GED: 3 SVP: 3 EC: I 5 PA: M 4 7

Matches precut veneer strips according to species of wood, grain, pattern, texture, and shade to form veneer face sheets:

Carries pieces of veneer from conveyor belt to work table. Arranges pieces according to similarities to form books of up to twelve matched sheets. Slides or pushes matched sheets on table for marking, or depresses foot pedal to actuate chain that conveys completed book to clipper machine for further processing. Discards defective sheets or strips into waste dolly, or carries them to clipper for further processing.

8233-130 SCARF GLUER(veneer & plywood) DPT:684
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Glues and fits together scarfed-plywood panels to form panels of specified length:

Spreads glue on scarfed edge of panels, using brush. Fits edges together to form joint. Sands excess glue from surface of panels after curing, using portable sander. Stacks finished panels on pallets. Brands grade and trade mark on edge of panels, using electric branding iron. May staple corners of panel to hold them together while being pressed. May push glued panels into hot-plate press to cure joint or remove cured panels from press.

8233-134 VENEER TAPER(veneer & plywood) DPT:684
veneer patcher; veneer repairman.
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Repairs splits in veneer sheets, using one of the following methods:

1. Places veneer on work table. Estimates length of gummed tape required and tears off tape from self-moistening dispenser. Applies tape to hold edges to be joined. Strikes area covered by tape to join together edges of veneer, using mallet or air hammer. Places repaired sheet in designated tray. 2. Taps veneer patch into bruise or split in sheet of veneer, using mallet or air hammer, and covers patch with gummed tape. 3. Places split area of sheet over anvil. Taps sheet lightly in area of split and continues tapping both sides of split until split is closed. Applies gummed tape to top surface of panel to keep split closed.

8233-138 PLYWOOD PATCHER, MACHINE(veneer & plywood) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Tends machine that repairs plywood panels containing defects such as pitch pockets, knots and holes:

Inserts patching stock into machine. Inspects panel for defects or notes defects previously marked with chalk. Slides defective area of plywood sheet under head of machine, and presses pedal to lower head that routs out defect, cuts patch, injects glue into hole and presses cut patch into glued hole. Wipes excess glue from panel and stacks panel on pallet, cart or conveyor.

May set up machine by fastening router and patch cutter into machine chucks, using wrench. May grade patched panels. May tend similar machine that repairs veneer sheets and be designated accordingly, Veneer Repairer, Machine

8233-142 VENEER-CLIPPER TENDER, AUTOMATIC(veneer & plywood) DPT:585
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends automatic-power shear to clip continuous sheet of veneer to specified width, and to clip out defects:

Starts conveyor that carries veneer under knife. Sets mechanism to operate automatically, to clip sheets of veneer to specified width. Observes veneer and presses switch to actuate knife to cut out defective sections. Stops conveyor to clear blockages manually, discarding damaged veneer into waste dolly. Records quantity, species, size and thickness of veneer cut.

8233-146 CORE-LAYING-MACHINE TENDER(veneer & plywood) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends machine that automatically lays face, back and core veneer sheets in sequence and spreads glue on core sheets to form plywood panels:

Presses button to start machine and observes its operation. Turns wheels, valves and dials to adjust and synchronize conveyors, reach and vacuum of mechanical-feed arms, tension on glue-spreading rollers, and to regulate flow of glue. Pushes pedal to control conveyor that moves stacked panels to hot-plate presses.

8233-150 SCARFING-MACHINE TENDER(veneer & plywood) DPT:685
plywood-scarfer operator.
GED: 2 SVP: 3 EC: 1 5 7 PA: M 3 4 7

Tends machine that scarfs ends of plywood:

Installs cutting tools in rotary cutter head and adjusts angle of cutter according to thickness of sheet, using hand tools. Adjusts guide according to width of material. Positions and clamps sheet on machine table. Presses button or pedal that moves sheet under rotary cutter that scarfs end. Removes scarfed sheets from machine and stacks them for gluing. Blows dust from cutters and machine table, using compressed air hose.

May tend similar machine that scarfs ends of pressboard panels.

8233-154 VENEER CLIPPER(veneer & plywood) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Tends power shear that clips stacks or sheets of veneer to specified size, or cuts out defective sections:

Places veneer strips or sheets singly or in bundles on clipper table. Positions veneer under clipper blade according to measurement or against pre-set stops. Depresses pedal, moves levers or pushes buttons to release blade-locking device and to actuate blade. Slides veneer on table or turns hand wheel to reposition table under blade after each cut until veneer is clipped to size or free of defects. Stacks clipped veneer for further processing.

May clean shear, using air hose. May keep production records.

8233-158 VENEER-REEL TENDER(veneer & plywood) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: H 3 4

Tends machine to reel wet veneer as it comes from lathe:

Lifts metal shaft into brackets on reeling machine and engages locking devices on ends of shaft. Opens trap door in front of reeling machine, by depressing pedal, to allow unusable veneer to drop onto conveyor. Wraps veneer sheet around shaft to begin reel. Starts machine and turns hand wheel to synchronize reel speed with lathe. Repairs breaks and starts new runs of veneer on reel by butting or overlapping ends of veneer sheets. Lifts full reel from machine with aid of other worker.

8233-162 VENEER-SPLICER TENDER(veneer & plywood) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends machine that splices veneer strips into sheets:

Starts conveyors that carry bundles of glued and jointed veneer strips to splicing machine. Feeds strips of veneer, edge to edge, into machine that forces pieces together and cures glued edges. Examines spliced veneer sheets for conformance to specifications, and turns hand controls to regulate heat, pressure of feed rollers and speed of machine.

May reprocess spliced sheets to produce sheets of larger size.

8233-166 VENEER JOINTER(veneer & plywood) DPT:666
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Feeds machine that smooths and squares edges of veneer strips preparatory to splicing, working as member of a team:

Aligns edges of stack of veneer strips manually or by pressing button to activate mechanical shaker arms. Pushes button to clamp stack for jointing and to activate jointing head that smooths and squares edges of veneer sheets. Starts conveyors to transfer jointed strips to splicing machine.

May record production. May feed guillotine-type jointer and be designated accordingly, Guillotine Jointer

8233-170 GLUE SPREADER(veneer & plywood) DPT:686
GED: 2 SVP: 3 EC: I 5 6 PA: M 4 7

Feeds machine that spreads glue on core sheets that form part of plywood panels:
Pushes load of pre-cut veneer core sheets over roller to feeding station.
Selects sound pieces. Feeds sheets through revolving-glue- spreader rollers. Views overhead mirror to observe process of core laying on lay-up table and to estimate width of final piece required for each layer. Fills glue reservoirs manually or turns valve on tank to start flow of glue onto rollers. Stops glue-spreader machine when core sheets jam or when adding glue. Adjusts space between rollers and amount of glue flow when thickness of veneer changes.

8233-174 LATHE SPOTTER(veneer & plywood) DPT:664
lathe charger.
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Positions logs on rotary veneer lathe, using chain hoist or powered crane:
Installs chucks on lathe spindles, according to size of log. Attaches hoist or crane hooks to ends of log, and pulls chain or pushes buttons to move log to lathe and position it between spindle chucks. Signals lathe operator to insert chucks into log to hold it in place. Releases hooks from log. Pulls cores of peeled logs and split or broken wood from lathe onto conveyor, using picaroon or peavey.
May record number and size of logs peeled, and calculate volume of veneer produced, using scaling stick and conversion tables. May position logs in barking lathe prior to peeling.

8233-178 HOT-PLATE-PRESS-TENDER HELPER(veneer & plywood) DPT:886
GED: 2 SVP: 2 EC: I 6 PA: M 3 4

Helps to load and unload hot-plate press that bonds glue-coated veneer sheets to form plywood panels:
Pushes load of veneer panels on rollers from lay-up table to loading elevator. Helps to load press. Unloads bonded panels from unloading elevator and piles them on dolly or unloads them from rack onto unloading hoist. See also definition for term title, 02-160 HELPER (any ind.).

8233-182 PLYWOOD-PANEL ASSEMBLER(veneer & plywood) DPT:667
GED: 2 SVP: 2 EC: I PA: M 4 7

Assembles plywood panels from glue-covered-veneer sheets and core board, working as member of team:
Positions lay-up board on conveyor. Stacks veneer sheets and core board alternately and in specified sequence on lay-up board, turning back and face sheets to ensure that the preferred surfaces will be on outside of finished panel. Pushes stack of panels to hot press when specified number of panels have been assembled.
May be concerned with a particular activity and be designated accordingly; for example,
Core-Layer
Sheet Turner

8235-WOOD TREATING OCCUPATIONS

This unit group includes occupations concerned with operating and tending machines and equipment to season or condition wood; treat wood with materials, such as preservatives and fire-retardants; and produce wood conglomerates, such as particle board, hardboard, and artificial fuel logs.

8235-110 KILN OPERATOR(woodworking) DPT:362
drying-kiln operator.
GED: 4 SVP: 6 EC: I 3 PA: L 4 5 7

Operates series of steam-heated kilns to season lumber and other wood products to specified moisture content:
Directs workers engaged in loading wood onto kiln cars and moving cars into kilns. Measures moisture content of random samples of wood throughout kilns, using moisture meter, or by sawing samples of

wood, weighing them before and after seasoning and calculating moisture content. Determines drying cycle according to work orders, species, dimension, quantity and initial moisture content of wood. Inspects loaded kiln, closes and secures door and prepares identifying tag for kiln contents. Opens water and steam supply valves, and sets control dials to activate and automatically control temperature, humidity and ventilation of kiln. Reads recording gauges and adjusts controls to regulate seasoning process. Closes valves, shuts off controls and opens kiln on completion of cycle, and verifies moisture content of wood. Directs workers to remove wood from kiln.

8235-114 GRINDING-MACHINE OPERATOR,
HARDBOARD(woodworking) DPT:382
GED: 4 SVP: 6 EC: I 5 PA: L 4 7

Operates and controls grinding machines and steam cookers to reduce wood chips to felt (wood fibre) used in making hardboard:
Adjusts grinding machine, using rule and hand tools. Presses buttons on control panel to start machines and conveyors. Regulates steam pressure, cooking temperature and spray or flow of water, wax, resin, and other chemical additives by turning valves on control panel and storage tanks. Observes cooking, grinding and felting of chips and flow of chips into machines. Monitors meters, gauges and charts that indicate pressure, temperature, flow, acidity and moisture content of fibre to ensure that material is processed according to specifications. Adjusts process from control panel.
May test samples of fibre for colour, consistency and relative acidity, using standard testing procedures.

8235-118 FORMING-LINE OPERATOR,
HARDBOARD(woodworking) DPT:382
pressman, hardboard.
GED: 3 SVP: 6 EC: I 5 PA: M 4 7

Operates line of machines to form mats from felt (wood fibre) and press them into hardboard panels:
Pushes buttons to activate forming and pressing machines. Observes gauges and turns valves to regulate flow of felt, water and additives to process. Adjusts steam pressure to control temperature of hot press. Turns panelboard controls to adjust pressing time and to synchronize timing of tiered-feeding-and-unloading conveyors with elevator movement of tiered-hardboard press. Observes forming of mat, and cutting and pressing of panels into hardboard. Adjusts panelboard controls to ensure product of specified dimensions and quality. Stands at side of press or rides open elevator and flips end of panel in each tier of press to loosen it from hot-pressing plate and facilitate automatic transfer to tiered-unloading conveyor. Verifies dimensions and weight of sample panels, using steel tape, micrometer, and scale. Maintains production records.
May assist maintenance workers to install and adjust stainless steel cauls and screens, drive sprockets, chains, rollers, and saws, using hand tools.

8235-122 FORMING-MACHINE OPERATOR, PARTICLE
BOARD(woodworking) DPT:382
GED: 3 SVP: 6 EC: I 5 PA: L 4 7

Operates machines and conveyors, from control panel, to segregate treated wood flakes or particles and form them into mats for pressing into flakeboard or particle board panels:
Starts forming-machine and associated conveyors by pressing buttons on control panel. Observes gauges, charts and other indicating devices that monitor forming process and flow of particles into machine. Adjusts control dials to regulate air pressure in forming machine that segregates wood particles and deposits them on moving conveyor in predetermined order of size. Observes weigh-scale dial that indicates weight of each mat before pressing, and adjusts thickness of mat, as indicated by weight, by regulating conveyor speed. Repositions baffle plates in slots of forming-machine to control air segregating process.

8235-126 PRESS-LINE OPERATOR, PARTICLE
BOARD(woodworking) DPT:362
GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Operates line of machines from control panel, to press, cool and saw particle board or flakeboard into panels:
Starts conveyors, hydraulic press, board cooler and automatic sizing saws, by pressing buttons. Synchronizes timing of feeding-and-

unloading conveyors with elevator movement of tiered-hydraulic press, by adjusting dials and moving switches. Adjusts press temperature, pressure and pressing time according to readings obtained from indicating devices, such as charts, meters and gauges, to press mats of wood particles into panels. Observes condition of mat and pressed boards and signals other workers to adjust moisture content of mat as required.

8235-130 TIMBER-TREATING-TANK OPERATOR(woodworking) DPT:662
GED: 3 SVP: 5 EC: I 3 6 PA: L 4 7

Controls one or more cylindrical retorts to impregnate wood products, such as railway ties, piling, poles and timbers, with preserving or fireproofing chemicals:

Opens valves to fill retort with treating fluid and to admit steam into heating coils. Heats unseasoned wood with treating fluid under vacuum to boil off water from wood. Opens valves to admit compressed air to force treating fluid into wood. Observes gauges and turns valves to control temperature, pressure and level of solution in retort, according to work order. Pumps treating fluid back into storage tank at end of treating cycle. Signals helper to open retort door for removal of wood.

May operate small locomotive or winch to move tram loads of wood into and out of retort. May operate mixing machine to blend treating ingredients according to formula. May measure moisture content of wood with portable testing device prior to treating.

8235-134 VENEER-DRYER TENDER(veneer & plywood) DPT:385
GED: 2 SVP: 4 EC: I 3 PA: L 4 7

Tends one or more automatic steam-heated dryers that dry veneer sheets:

Adjusts dryer speeds, steam pressure and cooling air to control drying process, prevent shrinkage and discolouration, and to improve glue bonding. Observes steam pressure gauges, dryer speed, temperature charts and thermometers. Turns valves to regulate steam pressure and temperature, and presses switches to control cooling fans. Adjusts moisture controls to keep humidity within specified limits. Watches for dryer fires and extinguishes them by opening water-deluge system valve. Observes and clears blockages along conveyors. Maintains records of numbers and volume of loads processed, down time, pressure, temperature and dryer speed.

May load dryer manually.

8235-138 DRYER TENDER, WOOD PARTICLES(woodworking) DPT:485
GED: 2 SVP: 4 EC: I 5 PA: L 4 7

Tends rotary dryer to dry ground-wood particles used in manufacture of particle board:

Ignites furnace and starts dryer, fans and pneumatic conveyors by moving electric controls. Collects samples of ground-wood particles from conveyors, and weighs samples before and after drying, and computes moisture content of particles. Adjusts dryer temperature by turning thermostat according to air humidity and moisture content of particles. Observes meters, gauges, charts and other indicators on control panel to ensure that automatic regulators and safety devices are functioning correctly.

May tend chip-grinding refiners by adjusting motor controls and tension of chip-grinding disks and be designated accordingly; Dryer-Refiner Tender, Wood Particles

8235-142 FUEL-LOG MAKER(woodworking) DPT:685
GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Tends machines that automatically compress sawdust into artificial fuel logs and extrude them onto conveyors:

Observes blowers, hoppers and screw conveyors to ensure steady flow of sawdust to machines. Observes gauges, examines compression marks on extruded logs and weighs finished logs to ensure that logs are compressed to specifications. Moves controls, such as buttons, levers, valves and thumbscrews to set and adjust flow of sawdust, pressure and rate of extrusion.

May pile or package finished logs. May replace worn or broken parts such as extrusion tips or feeding screws, using hand tools. May tend machines that compress and mould mixture of sawdust, wood chips,

and dry or liquid binders to produce hardwood fuel-briquettes and be designated accordingly, Briquette-Machine Tender

8235-146 CHIP-MIXING-MACHINE TENDER(woodworking) DPT:585

blender man.

GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends blending machine that coats wood flakes or wood particles with waxes and resins to prepare them for processing into flakeboard or particle board panels:

Measures waxes and resins according to formula, using scales or liquid measure, and pumps or pours materials into designated containers. Admits wood particles or flakes into blender by pulling lever, or by pushing button to start pneumatic conveyor. Turns hand valves or starts pump to admit coating materials into metering device of blender. Presses button to start pneumatic conveyor that carries coated particles or flakes to dryer. Records daily consumption of waxes and resins.

May tend dryer to dry wood particles to specified moisture content and be designated accordingly, Mixer-Dryer Tender, Wood Particles

8235-150 HARDBOARD-OILING-MACHINE TENDER(woodworking) DPT:585
GED: 2 SVP: 3 EC: I PA: M 4 7

Tends machine that immerses hardboard sheets in oil to impart smooth finish:

Opens valves and starts pumps to fill reservoir with heated oil. Observes gauge and adjusts thermostat to maintain oil at specified temperature. Starts automatic feeding and stacking machines. Observes oiled boards for flaws, scratches and oil droplets. Places board beneath each stack of hardboard and inverts top sheet to protect surface against marring during storage or further processing. Keeps production records.

8235-154 TEMPERING-PLANT TENDER(woodworking) DPT:585
GED: 2 SVP: 3 EC: I 3 PA: M 4 7

Tends oven, humidifier units and auxiliary equipment to temper oiled hardboard sheets by heat and moisture:

Observes gauges and chart recorders, and maintains oven temperature and moisture conditions in humidifier unit according to specifications, by adjusting controls on instrument panel. Pushes oiled hardboard sheets into kiln rack slots, by hand, and pushes loaded kiln rack into oven. Pulls loaded rack from oven after specified time and pushes rack into humidifier. Removes rack of tempered sheets to designated area for further processing. Records gauge readings and shift production on designated forms.

May push hardboard sheets to be tempered onto roller conveyor leading from oiling machine to tilting device that dumps sheets into electric transfer cart. May drive electric transfer cart to oven, humidifier or further processing area.

8235-158 DIP-TANK TENDER(woodworking) DPT:665
GED: 2 SVP: 3 EC: O 6 7 PA: M 2 3 4 7

Tends open tank to impregnate wood products with preservatives:

Signals crane operator to lift load of material over open tank and guides load into tank by hand or with rod, working from elevated platform. Chains tank loads of poles to high rack to prevent toppling during butt treating. Observes gauges and turns valves to regulate heat and flow of preserving solution in tank. Impregnates sashes, doors and other millwork products, using hand or power hoist to load and unload tank.

8235-162 INCISING-MACHINE TENDER(woodworking) DPT:665
GED: 2 SVP: 3 EC: O 5 PA: L 4

Tends machine that perforates wood products, such as timbers, ties or poles, to facilitate penetration of preserving chemicals:

Installs knife-studded incising rollers in machine and sets roller stops according to size of wood being processed, using wrenches and pry bar. Turns air valve to regulate pressure on incising rollers, and

activates rollers and conveyor system. Signals workers to load timbers or poles onto conveyor or powered feeding tram. Moves levers, presses pedals or pushes buttons to adjust conveyor speed and opening of incising rollers according to size of wood. Observes rollers, knives, bearings and conveyor mechanisms to detect worn or broken parts. May replace defective parts.

8235-166 HUMIDIFIER TENDER(woodworking) DPT:685
GED: 2 SVP: 3 EC: I 3 PA: M 4 7

Tends humidifier unit and auxiliary equipment to impart specified moisture content to pressed-hardboard panels:
Presses pedal to position humidifier car on hydraulic hoist at discharge end of forming press for automatic loading of panels into racks of humidifier car. Pushes loaded car to humidifier unit and activates hydraulic ram that transfers car into humidifier. Observes gauges, turns valves and moves controls to regulate moisture, heat and pressure in humidifier to impart specified moisture content to board. Pushes car from humidifier to automatic unloading machine and starts machine. Inspects panels for water marks, scratches and other defects, and removes substandard panels. Records number processed and rejected. Labels each lot of hardboard passing inspection. May remove screens from forming press, examine them for wear and damage, and mark faulty ones for repair or disposal.

8235-170 LOG COOKER(veneer & plywood) DPT:685
vatman.
GED: 2 SVP: 3 EC: B PA: L 4 7

Tends steam-heated water vats to soften logs for peeling into veneer: Directs crane operator with hand signals or uses hoist to load logs into vat and place cover on vat. Turns valves to fill vat with water. Opens steam valves to heat water to specified temperature. Observes gauges and charts, and adjusts valves to maintain water and temperature levels. Removes or directs removal of logs from vat after specified time. May roll logs from pile beside vat onto conveyor to mill.

8235-174 TIMBER-TREATING-TANK-OPERATOR DPT:685
HELPER(woodworking)
GED: 2 SVP: 2 EC: B 3 6 PA: M 3 4

Helps to impregnate wood products with preserving or fireproofing chemicals:
Opens and closes treating-cylinder doors, using pneumatic wrench. Turns steam, compressed air or solution valves and starts pumps as directed, to assist in operation of treating retorts. Tends pumps and opens drains to transfer chemicals from railroad cars, trucks, or boats to storage tanks. See also definition for term title, 02- 160 HELPER (any ind.).
May drill test bores in treated or untreated wood, using hand drill. May move loaded trams into and out of retorts. May tend mixing machine to blend chemicals according to formula.

8236-INSPECTING, TESTING AND GRADING OCCUPATIONS: WOOD PROCESSING EXCEPT PAPER PULP

This unit group includes occupations in inspecting, testing and grading work, as described under the term titles, 02-170 INSPECTOR (any ind.); 02-430 TESTER (any ind.); 02-150 GRADER (any ind.); concerned with quality control activities in processing lumber and other wood products, except paper pulp.

8236-110 TREATED-POLE TESTER(woodworking) DPT:384
GED: 3 SVP: 4 EC: B 7 PA: L 2 4 7

Tests powerline or telephone poles to ensure that wood preservative has penetrated according to specification:
Tests moisture content of poles during seasoning period, using moisture meter. Obtains test cores from poles, using hollow auger, and fills holes with pre-cut wooden plugs, using hammer. Performs routine tests on core samples to determine degree of penetration of preservative. Calculates weight of treating solution absorbed by the wood, using standard laboratory equipment and procedures and specified

chemicals and reagents. Records results of tests and recommends further treatment when specifications are not met. Inspects poles after framing to ensure conformance to specifications.

8236-114 GRADER, LUMBER(sawmill; woodworking) DPT:387
lumber inspector; marker, lumber.
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Inspects and grades milled or rough-sawn lumber according to standards:
Examines lumber on table, belt or conveyor for defects, such as knots, stains, faulty edges, pitch pockets, wormholes and unsatisfactory milling. Grades and marks lumber or boards to fill orders, or for remanufacturing, trimming or upgrading.
May measure thickness of boards, using calipers and rule, to ensure specified dimensions. May remove unsatisfactory pieces from conveyor or table. May scale board footage and record results. May be designated according to type of lumber graded; for example, Flooring Grader
Green-Lumber Grader
Planer-Mill Grader

8236-118 SHINGLE INSPECTOR(sawmill) DPT:364
GED: 3 SVP: 3 EC: I PA: L 4 7

Inspects shingles at each sawing machine to ensure production of shingles of specified thickness and adjusts machine to maintain established standards:
Measures thickness of shingles, using gauge. Adjusts machine as required, to produce shingles of specified thickness, by turning knobs. Verifies size of bundles to ensure that they contain correct quantity of shingles, using measuring tape. Examines bundles of shingles and sorts them into different grades. Notifies workers when bundles fail to meet standards. Counts number of bundles packed at each table and records daily production.

8236-122 POLE INSPECTOR(woodworking) DPT:587
GED: 2 SVP: 4 EC: O PA: L 3 4

Inspects poles for defects, and classifies them according to size and specifications:
Examines poles for defects, such as splits, knots or rot, and verifies that framing specifications have been met. Measures length and diameter of poles with tape. Stamps measurements on ends of poles. Classifies poles according to size, and writes report showing size, class and number of poles ready for treating.
May mark framing instructions on poles.

8236-126 GRADER, VENEER AND PLYWOOD(veneer & plywood) DPT:587
GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Grades sheets or strips of veneer or plywood panels according to company specifications:
Examines veneer or plywood for colour, texture of grain and defects, such as knots, holes, splits or unsanded areas. Marks grade on individual sheets or on top sheet of pile. Records number of sheets or loads graded. Marks defects.
May be designated according to product graded; for example, Plywood Grader
Veneer Grader

8236-130 TIE-AND-TIMBER INSPECTOR(sawmill) DPT:587
GED: 2 SVP: 3 EC: O 6 PA: M 3 4 7

Inspects timber products, such as railroad ties and mine timbers, at mill yard or shipping point, to ensure conformance to specifications:
Examines product for straightness or for defects, such as rot, splits, or knots, and verifies critical dimensions, using tape measure. Records inspection reports on work sheets.
May imprint grade or other identification on ties or timbers, using stamping hammer.

8236-199 OTHER INSPECTING, TESTING AND GRADING OCCUPATIONS, WOOD PROCESSING

This group includes wood process inspectors, testers and graders, not elsewhere classified; for example, those who measure width and length of rough or dressed lumber to determine board footage, and those who inspect shakes to ensure established standards are met. Typical examples of occupational titles covered by this residual group definition are:

Lumber Scaler(sawmill; woodworking)
Shake Inspector(sawmill)

8238-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: WOOD PROCESSING, EXCEPT PAPER PULP

This unit group includes occupations in labouring and other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), concerned with feeding, offbearing and handling activities in the processing of lumber, shingles, plywood and wood conglomerates. Activities include: feeding saws and associated machines; treating wood with preservatives and fire-retardants; stacking, piling, moving and sorting logs, lumber and related materials; and performing other elemental duties in a sawmill, shingle mill, plywood mill or lumber yard.

8238-110 SHINGLE TRIMMER(sawmill) DPT:686
GED: 1 SVP: 2 EC: I 5 6 PA: L 4 7

Trims edges and cuts out defects from shingles, using table saw: Starts saw and conveyor. Examines shingle for defects. Places shingle on saw conveyor and guides shingle through saw. Tosses unusable shingles into waste bin.
May replace worn saw blades, using hand tools.

8238-114 VENEER-STRIP-CUT-OFF SAWYER(veneer & plywood) DPT:686
veneer fish-tail sawyer.
GED: 1 SVP: 2 EC: I 5 PA: M 4

Feeds cut-off saw that squares ends of veneer strips: Carries strips of veneer to work station and butts strips against raised edge of cutting table. Starts saw and pulls saw across strips of veneer or activates hydraulic cylinder or similar device that moves saw across strips, to square ends in turn. Stacks squared strips in designated area for further processing.
May operate dual sawing machine that squares off both ends of veneer strips simultaneously.

8238-118 LABOURER, PLYWOOD AND VENEER PLANT(veneer & plywood) DPT:686
GED: 1 SVP: 2 EC: I 5 6 7 PA: H 3 4 5 6 7

Performs any combination of the following duties in the processing of veneer sheets and plywood panels:
Feeds veneer sheets into clipping, pressing and drying machines. Assists in changing cutting knives on machines. Clears veneer blockages in machines, using hook. Pulls and sorts strips or sheets of veneer from machines, such as conveyors, lathes, patchers or splicers, and piles them in trays, bins, bundles or dollies, and on rollers or tables according to length, width, colour or grade. Pushes dolly loads of veneer to dryers, patchers and glue spreaders for processing into plywood panels. Loads and unloads strips or sheets of veneer onto or from automatic conveyor-dryer. Winds strips of veneer from lathe onto reel. Cleans machines and work areas, using hose.
May be designated according to duties performed; for example, Plywood-Sander Feeder
Veneer-Clipper Feeder
Veneer-Dryer Feeder

8238-122 LUMBER SORTER(sawmill) DPT:687
chainman.

GED: 1 SVP: 2 EC: I 5 PA: H 3 4 7

Sorts and piles lumber during various stages of processing: Pulls lumber from conveyors, tables, hand trucks, saws, grading tables or other work stages. Sorts lumber according to grade markings, size and length. Gauges length and size of boards by sight, by marks on table or by measuring. Slides and stacks lumber onto piles, hand trucks or kiln cars, or places boards in racks or on conveyors.
May perform related sawmill duties, such as feeding saws and offbearing, loading and moving lumber. May be designated according to type of wood sorted or machine from which lumber comes; for example, Dry Chainman
Green Chainman

8238-126 LABOURER, WOOD-PRESERVING PLANT (woodworking) DPT:687
GED: 1 SVP: 2 EC: O 6 7 PA: VH 2 3 4

Performs any combination of the following duties to process wood products, such as timbers, ties, pilings and poles in wood-preserving plant:
Loads and unloads wood stock from railway cars, trucks and barges, by hand or using hoists or winches. Positions poles for framing. Positions wood stock for feeding into adzing, boring, cutting and incising machines and removes processed wood from machines by hand or with hoist. Piles wood on trams by hand or with hoist, inserts wooden strips to bind, space and shape load and chains or bolts down load, using wrenches. Bolts and unbolts doors of treating cylinders with hand or pneumatic wrench. Moves loads in and out of retorts, using winch.
May be designated according to duties performed; for example, Car Stacker
Framing Labourer
Tie Handler
Tram Loader

8238-130 LOG PEELER, HAND(sawmill; veneer & plywood) DPT:687
GED: 1 SVP: 2 EC: O 3 6 PA: H 4

Peels bark from logs manually: Positions log in holding rack for peeling, using cant hook, or by manipulating hand-held control box of overhead travelling hoist. Inserts spudder point or axe edge into bark and slits bark lengthwise of log. Pulls bark from log, using axe or spudder point.
May roll log to next process, using cant hook.

8238-134 SAWMILL LABOURER(sawmill; woodworking) DPT:887
GED: 1 SVP: 2 EC: B 5 6 PA: H 2 3 4

Performs any combination of the following elemental duties in a sawmill, shingle mill or lumber yard:
Rolls logs to log deck from truck or conveyor. Positions logs on saw carriage or on pole-peeling machine feeder, using peavey. Removes embedded objects, such as stones or nails from logs, using axe or saw. Splits blocks from logs too large for sawing, using air powered wedge. Aligns logs, wooden blocks or lumber on conveyors and clears blockages, using peavey or picaroon. Pulls sawn blocks onto floor chain-conveyor and positions them on end for splitting, using picaroon. Stacks blocks of wood, lumber or shingles in designated areas. Places sticks in machine that automatically drops them between layers of wood being stacked. Cleans work areas to remove accumulated bark or sawdust, using shovel, scraper or air hose.
May be concerned with a particular activity and be designated accordingly; for example, Block-Piler, Shingle Mill(sawmill)
Deckman(sawmill)
Log Turner(sawmill)
Lumber Straightener(sawmill)
Pole-Peeling-Machine Loader(woodworking)
Stick Layer(sawmill)

8238-138 BARKING-MACHINE CLEANER(pulp & paper; sawmill) DPT:887
GED: 1 SVP: 1 EC: 1 4 5 6 PA: M 4

Removes bark, small logs and debris from barking-drums and conveyors:

Stops drums to permit removal of bark or logs. Pulls bark from vents by hand and deposits it in sluice leading to bark pile. Clears log jams from drums and small logs and debris from sluices, using water hose, pike pole, or picaroon.

May sort logs on turntable conveyor leading from barking machines, using picaroon. May stack logs in mill yard to contain pulp pile, or to provide passage under pile for conveyors.

8238-199 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, WOOD PROCESSING

This group includes wood-processing labourers and other elemental workers, not elsewhere classified; for example, those who convey lumber and other wood products to and from work areas, salvage scrap lumber and wood chips for reprocessing, and clean treating cylinders and retorts used in wood-preserving plants. Typical examples of occupational titles covered by this residual group definition are:

Lumber Handler(sawmill; woodworking)

Salvager, Lumber(sawmill; woodworking)

Scrap Piler(sawmill; woodworking)

Treating-Cylinder Cleaner(woodworking)

8239-WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with processing wood by operating or tending machines to remove bark and clean logs and poles, and to reduce logs to chips, flakes, excelsior, hog fuel or wood flour; screening wood chips; feeding saws by guiding and positioning cants, slabs or lumber on roller tables in a sawmill; and tending machines that saw pressed board or plywood sheets into panels of specified size.

8239-110 HYDRAULIC-BARKER OPERATOR(pulp & paper; sawmill) DPT:682
GED: 3 SVP: 4 EC: 1 5 PA: L 4 7

Operates travelling high-pressure water jet, log-rolls and associated conveyors to remove bark and dirt from logs, from glassed- in control station:

Activates kicker arms to transfer log from chain conveyor to roller cradle for barking. Starts log rotating beneath water jet, by pressing buttons on control panel. Moves hand and foot controls simultaneously to control speed of travelling water jet, height of nozzle, width and angle of spray, and direction and rate of log rotation. Presses pedal to wash bark and refuse from window control station. Reverses rolls to eject barked log onto conveyor leading to saw deck.

8239-114 BARKING-MACHINE OPERATOR(pulp & paper; woodworking) DPT:682
GED: 2 SVP: 4 EC: B 5 PA: M 3 4 7

Operates machine that rotates log under travelling cutting heads to remove bark, knots and dirt, or to shape logs into round or tapered form for use as poles or boat masts:

Positions log on machine, using power or chain hoist. Starts machine and moves levers or presses buttons to start log rotating, and to lower cutting heads against log. Adjusts controls to regulate speed of log rotation and pressure and horizontal movement of cutting heads along log. Raises head, stops log rotation, and removes log by means of hoist, powered carriage, or by pressing button which allows log to drop onto floor-chain conveyor.

May install and adjust cutting heads. May clear jams on conveyors, using peavey. May operate specific machine and be designated accordingly; for example,

Barking-Lathe Operator(pulp & paper)

Pole-Peeling-Machine Operator(woodworking)

8239-118 RING-BARKER OPERATOR(sawmill) DPT:682
GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Operates hydraulic or mechanical ring-type barking machine from control booth to remove bark and foreign matter from logs:

Presses buttons to start conveyors that move log to barking ring. Moves controls to adjust circumference of ring of rotating knives or water-jet nozzles to diameter of log. Activates feed rolls of barking machine and regulates speed of log feed and rotation of ring or log to remove bark. Reverses feed rolls to reprocess log through machine as required. Starts conveyors and kicker arms to move log from barker to next process.

8239-122 DRUM-BARKER TENDER(pulp & paper; sawmill) DPT:685
GED: 2 SVP: 4 EC: 1 4 5 6 PA: M 4 7

Tends one or more revolving barking drums to remove bark and foreign matter from logs:

Starts conveyors to move logs from pond into barking drums. Moves controls that start drums revolving to tumble logs and knock off bark. Turns valves to regulate water spray that washes bark and dirt from log. Clears log jams in drum, using pike pole and chain hoist.

8239-126 MILLER, WOOD FLOUR(woodworking) DPT:685
GED: 2 SVP: 4 EC: 1 5 7 PA: H 4 7

Tends milling machine that pulverizes and sifts sawdust to make wood flour for use in manufacture of products, such as explosives, plastic-wood filler, and moulded plastics:

Reads work order to ascertain quantity and particle-size of flour required. Selects screen or specified mesh and places it on bed of reciprocating sifter. Starts hammer mill, conveyor, auger or blower, and sifter, and observes pulverizing and sifting operation. Collects and inspects flour sample to verify adherence to specifications. Empties sifters, conveyors or mills when overloading or jamming occurs, using hand scoop. Repairs screens by gluing patch over damaged area. Sacks wood flour. Transports sacks to storage, using handtruck or wheelbarrow.

May clean screens periodically, using brush.

8239-130 SIZING-SAW TENDER(veneer & plywood; woodworking) DPT:685
head-saw operator.
GED: 2 SVP: 4 EC: 1 5 7 PA: M 4 7

Tends multiple-blade sawing machine that trims pressed board or plywood panels to specified dimensions:

Sets guides and saws to required dimensions of panel, using rule and hand tools. Starts machine and places panel on feed bed against guide. Pushes panel until engaged by feed rollers, belt, or pawls of feed chain. Measures sample panels for conformance to specified dimensions. Adjusts saws or guides as required. Replaces dull saw blades. Prepares production reports.

May tend machine with automatic loading and feeding mechanisms. May grade trimmed panels. May be designated according to product trimmed; for example,

Sizing-Saw Tender, Hardboard(woodworking)

Sizing-Saw Tender, Particle Board(woodworking)

Sizing-Saw Tender, Plywood(veneer & plywood)

8239-134 CHIPPERMAN(pulp & paper; sawmill; woodworking) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 3 4 7

Tends one or more machines that reduce logs, blocks, or sawmill waste into chips or flakes:

Pushes buttons to start machines and conveyors. Regulates speed of conveyors or cutters to control size of flakes. Observes conveyors, screens, and hoppers to ensure correct feeding, and clears blockages, using peavey. Removes foreign matter such as nails or stones.

May position logs or pieces of wood on conveyor, using picaroon. May replace or repair conveyor belts and install chipping or flaking knives, using hand tools. May be concerned with a specific activity and be designated accordingly; for example,

Chipping-Machine Tender(pulp & paper; sawmill)

Flake-Cutter Tender(woodworking)

8239-138 LUMBER SORTER, MACHINE(sawmill) DPT:685
drop-sorter operator.

GED: 2 SVP: 3 EC: I 5 PA: H 4 7

Tends machine that drops boards through slots on chain conveyor to sort rough lumber for grading, resawing or chipping: Starts and stops conveyors to regulate flow of wood to machine. Straightens and aligns boards parallel to slots by hand, with picaroon, or using switches to raise and lower stops. Examines lumber for defects such as rot, bark and poor sawing. Presses pedal to lower or raise gates to drop wood onto conveyors to grading, resawing, or chipping areas or to next work station. Clears blockages on conveyors.

8239-142 SAWMILL WORKER(sawmill) DPT:687

GED: 2 SVP: 3 EC: I 5 6 PA: H 2 3 4

Performs any combination of the following duties in a sawmill: Unloads logs from trucks or cars by removing truck stakes or by placing skids and rolling logs onto sawmill deck, using peavey. Examines logs for defects such as decayed wood, splits, imbedded metal or stones, and marks or cuts off defective parts, using axe or saw. Rolls log from deck onto saw carriage, using peavey. Guides and straightens slabs emerging from saw onto roller table or conveyor. Positions cants or lumber on roller tables to feed trimmer or gang saws, using cant hook or picaroon or by pressing buttons on hand-held control box that operates overhead hoist. May be concerned with a particular activity and be designated accordingly; for example, Cant Transfer Man Head-Saw Offbearer Trimmer Loader

8239-146 EXCELSIOR-MACHINE TENDER(woodworking) DPT:685

GED: 2 SVP: 2 EC: I 6 PA: M 4

Tends one or more machines that shred wood into excelsior: Depresses pedal to open feed rollers, and positions wood stock manually. Starts machine that automatically feeds wood stock to

cutters. Stops machine and turns wood stock to expose all surfaces to cutters to obtain maximum amount of excelsior from wood. Depresses pedal to disengage feed rollers and cutting knives, and removes unusable portion of wood from machine, using hook.

8239-150 HOG-MACHINE TENDER(sawmill) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that pulverizes scrap wood into small particles for use as fuel:

Presses buttons to start rotating hammers and cutters inside hog machine and turns valve to regulate flow of water that moistens particles to prevent fire. Starts and stops conveyors, using push buttons, to control flow of scrap and hog machine, and flow of fuel to burners or storage. Clears blockages in conveyors and throws or shovels spilled scrap onto conveyors.

May transport scrap wood from production areas and load conveyors that feed hog machine. May tend metal detector to remove metallic objects from scrap.

8239-154 SCREENMAN, CHIPS(pulp & paper; sawmill; woodworking) DPT:685

GED: 2 SVP: 2 EC: I 5 7 PA: M 3 4

Tends shaker screens that remove slivers, sawdust, dirt, knots and oversized chips from wood chips used for making products, such as paper-pulp and particle-board sheets:

Starts conveyors to move wood chips from storage to screens and to transfer cleaned chips to designated bins. Starts screens and blower to clean chips, and adjusts feeding mechanism on screens to prevent overloading. Cleans screens and airhose and brush after each run. Observes operation of screen and clears minor blockages. Stops conveyors and screens and informs maintenance men of major blockages or breakdowns and assists in disassembling and reassembling equipment. Cleans spillages in work area, using shovel.

May tend chipping machine to produce wood chips or reduce oversized chips to specified size.

825-PULP AND PAPERMAKING AND RELATED OCCUPATIONS

This minor group includes occupations concerned with converting cellulose materials into pulp, and making and finishing paper and paperboard. These occupations are classified in the following unit groups:

- 8250 Foremen, Pulp and Papermaking and Related Occupations**
- 8251 Cellulose Pulp Preparing Occupations**
- 8253 Papermaking and Finishing Occupations**
- 8256 Inspecting, Testing, Grading and Sampling Occupations, Pulp and Papermaking**
- 8258 Occupations in Labouring and Other Elemental Work, Pulp and Papermaking**
- 8259 Pulp and Papermaking and Related Occupations, n.e.c.**

8250-FOREMEN, PULP AND PAPERMAKING AND RELATED OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in converting cellulose materials into pulp, and making and finishing paper and pasteboard.

**8250-110 FOREMAN, CELLULOSE-PULP-PREPARING
OCCUPATIONS(pulp & paper) DPT:138**

Supervises and co-ordinates activities of workers engaged in operating and tending equipment that reduces logs, rags, scrap pulp, and similar cellulose materials to pulp slurry, (Unit Group 8251)
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Beater Room
Foreman, Pulp Plant
Foreman, Wet Room
Foreman, Wood Room
Grinderman, Head

**8250-112 FOREMAN, INSPECTING, TESTING, GRADING
AND SAMPLING OCCUPATIONS, PULP AND
PAPERMAKING(paper prod.; pulp & paper) DPT:138**

Supervises and co-ordinates activities of workers engaged in inspecting, testing, grading and sampling pulp, paper and paper products, (Unit Group 8256):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Paper Sorters and Counters(paper prod.)
Foreman, Pulp Testers(pulp & paper)
Foreman, Sheet-Paper Inspectors(paper prod.)

**8250-114 FOREMAN, LABOURERS AND ELEMENTAL
WORKERS (pulp & paper) DPT:138**

Supervises and co-ordinates activities of workers engaged in feeding conveyors and hoppers, cutting wet pulp, washing screens, collecting broke, sorting rags, and performing general clean-up duties, (Unit Group 8252):
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Rag-Room
Yard Foreman

**8250-118 FOREMAN, PAPERMAKING AND FINISHING
OCCUPATIONS(pulp & paper) DPT:138**

Supervises and co-ordinates activities of workers engaged in operating and tending equipment that makes paper, paper pulp and paperboard from pulp slurry, and imparts gloss and finish to paper, (Unit Group 8253):
Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Coating-Room Foreman
Core-Room Foreman
Foreman, Paper Machine
Foreman, Pulp Processing
Tour Foreman

**8250-199 OTHER FOREMEN, PULP AND PAPERMAKING
AND RELATED OCCUPATIONS**

This group includes pulp, paper and related products-making foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in making acoustical tiles, and baling paper. Typical examples of occupational titles covered by this residual group definition are:
Foreman, Acoustical-Tile Production(paper prod.)
Foreman, Paper Baling(paper prod.)

8251-CELLULOSE PULP PREPARING OCCUPATIONS

This unit group includes occupations primarily concerned with operating and tending equipment that reduces logs, rags, scrap pulp, and similar cellulose materials to pulp slurry. Activities include: grinding, shredding, mixing, screening, cleaning, cooking, and bleaching of pulp material. Occupations concerned with operating equipment to grind or screen wood chips are classified in Unit Group 8239, WOOD PROCESSING OCCUPATIONS, EXCEPT PAPER PULP, N.E.C.

8251-110 CONTINUOUS-DIGESTER OPERATOR(pulp & paper) DPT:262
cook, continuous process.
GED: 4 SVP: 7 EC: 1 PA: L 4 5 6 7

Operates continuous-process digester and associated equipment from control room to produce cooked pulp from wood chips:
Monitors master-control panel to locate malfunctioning equipment and inconsistent material or product flow. Observes temperature, pressure and flow gauges and charts, lighted flow diagrams, and coloured panel lights. Listens for warning buzzers, sirens and bells to detect trouble sources. Directs helper to suspected trouble spots, to observe machinery, report on malfunctions and make adjustments. Adjusts controls according to panel indicators and process requirements to start and stop pumps, conveyors, fans, motors and other equipment and open and close valves to regulate flow of materials such as chips, chemicals, steam, and cooked wood pulp. Tests samples of cooking liquor by titration to determine its strength and to determine length of cooking cycle. Compiles production records.
May operate associated process equipment to produce cooking chemicals, wash and screen cooked pulp, refine pulp stock or recover chemicals from exhaust gases.

8251-114 BLEACHER OPERATOR, PULP(pulp & paper) DPT:362
GED: 4 SVP: 6 EC: 1 7 PA: L 4 5 6 7

Controls absorption towers, mixing tanks, rotary drums, washers and associated equipment to bleach pulp:
Starts pumps and adjusts panel controls to regulate flow rate and consistency of pulp stock to absorption towers and bleaching and soaking tanks, according to specified bleaching sequence. Opens and closes valves to allow metered flow of chemicals such as liquid and gaseous chlorine, caustic soda and hypochlorite into pulp according to bleaching specifications. Starts agitators to mix pulp and chemicals. Starts pumps and turns valves to control flow of pulp to rotary drum washers and adjusts spray of wash water onto pulp to wash out soluble impurities and excess bleach after each bleaching stage. Signals other workers to perform routine tasks associated with bleaching operations. Observes gauges, dials and charts, examines test reports and adjusts controls to ensure specified bleaching of pulp. Starts pumps to transfer bleached pulp to storage tanks. Prepares production reports based on daily operations.
May test whiteness of pulp, using reflectance meter, or tests strength of bleaching chemicals by titration. May control other process equipment to thicken, screen, clean, or refine pulp. May operate equipment such as evaporators and mixing tanks to produce bleaching chemicals. May test chlorine gas safety equipment and alarm systems.

8251-118 DIGESTER OPERATOR(pulp & paper) DPT:362
cook, batch process.
GED: 4 SVP: 6 EC: 1 4 5 7 PA: L 4 5 6 7

Operates battery of steam digesters to cook wood chips with white liquor or acid to make pulp for use in manufacture of paper and paperboard:
Signals DIGESTER-OPERATOR HELPER to charge digesters with specified amounts of chips and chemicals. Turns valves or moves panel controls to admit steam into digesters to raise temperature and pressure within specified limits. Monitors temperature, flow, and pressure gauges and charts to ensure that chips are cooked according to specifications. Tests samples of digester liquid by titration to determine completion of cooking process. Opens valves of digester to blow cooked pulp into tank or pit. Prepares production records.
May be designated according to process; for example,
Cooker. Soda

Cooker, Sulphate
Cooker, Sulphite

8251-122 SCREEN-ROOM OPERATOR(pulp & paper) DPT:362
GED: 3 SVP: 6 EC: I 5 PA: L 4 5 7

Operates screening equipment, from central control panel, to reduce pulp stock to specified consistency for bleaching;
Turns dials and moves panel and hand controls to regulate flow of water and pulp to cleaning and screening equipment. Observes gauges, coloured panel lights, and level indicators to monitor system operation and to identify trouble sources and malfunction of equipment. Directs activities of workers in screen-room. Prepares production reports and records data such as flows, levels, and other information obtained from gauge readings and charts.
May operate screening equipment for a particular type of process and be designated accordingly; for example,
Screen-Room Operator, Chemical Pulp
Screen-Room Operator, Groundwood

8251-126 BEATER OPERATOR(pulp & paper) DPT:682
GED: 3 SVP: 5 EC: I 4 5 PA: L 4

Controls beater engines and related equipment to process furnish (stock) for making paper:
Starts pumps and adjusts valves to charge vats with specified amounts of slush pulp, fillers, size, alum and liquid chemicals. Starts engines and adjusts beater rolls to obtain specified degree of pulp fineness and hydration. Examines visually, furnish for specified consistency and size of fibres. Dips sample from vat for laboratory testing. Starts pumps to transfer furnish to storage chests.
May operate machine to refine pulp. May calculate volume and weight of furnish ingredients from technical control formulas.

8251-130 GRINDER MAN(pulp & paper) DPT:682
GED: 3 SVP: 5 EC: I 4 5 PA: M 2 4

Operates machines to grind logs, wood blocks, or woodchips into fibres used in making paper pulp:
Adjusts panel controls to regulate conveyor system that feeds wood to hopper of grinder machines. Moves lever to actuate hydraulic piston that presses wood against revolving grindstones. Straightens wood in machine pocket or hopper to prevent jams, using picaroon. Turns valves to regulate spray of water to cool grindstones and to control flow of pulp from discharge end of machine. Observes temperature gauge and colour of pulp for evidence of burns caused by dull or broken grindstones and notifies foreman of defects. Cleans pump buildup from around water spray pipes to prevent burning of pulp.

8251-134 PULP-DRIER OPERATOR(pulp & paper) DPT:562
pump-press operator.
GED: 3 SVP: 4 EC: I 4 5 6 7 PA: L 2 3 4

Operates machines that mix, dry, shred, and bale pulp for paper manufacturing:
Turns valves or control knobs to regulate flow of pulp slush from main supply line to pulp machine. Starts equipment, or signals machine tenders to start individual units of equipment that mix, dry, shred and bale pulp. Adjusts machine to produce pulp bales of specified moisture content by turning control knobs and opening and closing valves. Cleans pulp sludge from machine components using brush, scraper and air hose. Lubricates machine. Records production.

8251-138 BROWN-STOCK WASHER(pulp & paper) DPT:662
pulp-washer operator; washerman.
GED: 3 SVP: 4 EC: I 4 5 7 PA: L 4

Operates series of rotary drum filters from control panel to wash cooking liquor from pulp:
Starts drums rotating, activates pumps and opens and closes valves to control flow of cooked pulp to washers by pushing buttons and turning dials on control panel. Turns valves to regulate spray of wash liquor and water onto pulp stock to wash out cooking liquor and to adjust dilution of wash liquor to specified strength. Opens valves and starts pumps to transfer wash liquor to recovery storage tank. Directs helper to tend equipment such as knotters and refiners. Clears plugged washer showers with wire hook.

May tend flat or centrifugal screens to remove knots or uncooked chips. May operate machines to refine lumps of coarse fibres. May perform tests to determine degree of delignification of pulp or strength of wash liquor.

8251-142 PULP-REFINER OPERATOR(pulp & paper) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: M 4

Operates battery of machines to refine pulp and shorten fibres in continuous process to prepare pulp for paper making:
Turns handwheels to adjust distance between bedplate and rotor knives to obtain specified fineness of fibres. Starts machines and pumps to regulate flow of pulp from beater chests through refining machines to paper machine chest. Examines pulp, reviews laboratory test reports, and adjusts machines to ensure that pulp meets specifications.

8251-146 BLEACHER TENDER(pulp & paper) DPT:365
bleacher helper.
GED: 3 SVP: 4 EC: I 5 7 PA: L 4 5 6

Tends absorption towers, mixing tanks, rotary drums, washers, and associated equipment to bleach pulp:
Observes and adjusts equipment to ensure efficient operation and to locate trouble sources. Turns valves and starts and stops motors and pumps as directed. Collects samples from various stages of process and performs standard titration tests to maintain quality control. Measures brightness of bleached pulp with reflectance meter. Measures acidity of pulp with pH meter. Performs standard chemical tests to measure residual chlorine in pulp.
May measure strength of bleaching solution and recausticized cooking liquor.

8251-150 CONTINUOUS-DIGESTER TENDER(pulp & paper) DPT:365
cook's helper, continuous process.
GED: 3 SVP: 4 EC: I 5 7 PA: L 4 5 6

Tends equipment, under direction of operator, to produce cooked pulp from wood chips:
Observes and adjusts equipment, under direction of operator, to ensure efficient operation and continuous process flow and to locate trouble sources. Monitors master control panel in absence of operator. Dries and weighs specified amounts of pulp to determine consistency, performs titration tests on sample solutions, measures density of wash liquor with hydrometer, and takes pH readings. Opens valves to obtain samples of cooking liquor for testing by operator. Opens valves and starts pumps to feed sulphur dioxide and caustic soda into plant from outside storage tanks. Assists mechanics in carrying out repairs on equipment and lubricates equipment using grease gun and oil can.

8251-154 SCREENMAN(pulp & paper) DPT:685
GED: 3 SVP: 4 EC: I 4 5 PA: L 2 4

Tends deckers, rotary screens, centri-cleaners, or washers that remove knots, sand, coarse fibres, unprocessed chips and water from pulp stock, and reduce stock to specified consistency for bleaching by performing any combination of the following duties:
Turns valves and activates pumps to regulate flow of pulp stock and water to cleaning and screening equipment. Opens and closes gates to adjust suction in cylinder of deck machine to deposit pulp on screen. Turns handwheel to adjust pressure of pick-up roll against cylinder to obtain specified consistency of thickened pulp stock. Pulls lever to adjust or clear blade that scrapes pulp from decker pick-up roll and into storage chests. Adjusts water sprays to wash pulp through rotating screens and rejected material into receiving chest. Collects samples of pulp stock from storage tank, using ladle, and dries and weighs sample to determine consistency.
May send samples of pulp to laboratory for testing. May tend a particular type of machinery and be designated accordingly; for example,
Bull-Screenman
Centri-Cleaner Man
Deckerman

- 8251-158 DIGESTER TENDER**(pulp & paper) DPT:685
 cook's helper.
 GED: 3 SVP: 3 EC: I 3 4 5 6 7 PA: M 4 6

Feeds wood chips and opens valves to admit white liquor or acid into digester that cooks chips into pulp, working with another worker: Unbolts and removes digester cover, using wrench and chain or screw hoist. Lowers feed pipe into digester using hoist and pushes buttons, pulls lever or turns wheel to start flow of chips into digester. Replaces and bolts cover. Pushes control-panel buttons, or turns valve to admit specified quantities of chemicals and steam into digester. Opens valves to blow cooked pulp into pit or tank. May tend conveyors to transfer chips to hoppers. May monitor pressure gauges to ensure that chips are cooked according to specifications. May take sample of pulp at completion of cooking cycle and forward to operator for visual inspection.

- 8251-162 BROWN-STOCK-WASHER HELPER**(pulp & paper) DPT:665
 pulp-washer-operator helper.
 GED: 2 SVP: 3 EC: I 4 5 7 PA: M 4

Tends equipment that washes cooking liquor from woodpulp: Helps operate knotters, refiners, rotary washers, and other equipment to wash cooking liquor from cooked woodpulp. Starts and stops equipment, adjusts refiners, and opens and closes valves under direction. Maintains cleanliness of area by using water hose and wipers. Replaces empty barrels of defoaming agent and adjusts pump. See also definition for term title, 02-160 HELPER (any ind.).

- 8251-166 SCREENMAN, PAPER MACHINE**(pulp & paper) DPT:665
 GED: 2 SVP: 3 EC: I 4 5 6 PA: M 2 4 5

Tends equipment to screen furnish (pulp stock and additives) prior to paper-making and assists in operation of wet end of cylinder machine: Turns valves as directed by paper-making machine operator or foreman to regulate flow of water, pulp, defoaming agent and starch onto screen plates. Scrapes residue from screens with hand rake. Adjusts guides with wrench to prevent wet felt from running off cylinder machine rollers. Guides felt back onto rollers, using iron bar. Observes pickup of pulp from cylinder screens by carrier net and formation of continuous sheets. Notifies operator of machine malfunctions and presence of defects such as breaks, slivers, dirt and slime spots.

- 8251-170 BEATER TENDER**(pulp & paper) DPT:685
 beater-operator helper.
 GED: 2 SVP: 3 EC: I 4 5 PA: H 2 4

Tends beaters and vats that prepare furnish (stock) for making paper: Weighs and dumps dry ingredient such as dyes, size, starch, alum and broke material, into vat according to formula. Weighs, mixes and cooks dyes. Observes vat and beater operation and notifies operator of malfunctioning, cleans out vat with water and hose and scrapes out adhering matter. Drives fork-lift truck to transport materials from storage. May dip samples from vat for laboratory testing.

- 8251-174 BLEACHER, RAG STOCK**(pulp & paper) DPT:685
 GED: 2 SVP: 3 EC: I 4 7 PA: M 2 3 4

Tends equipment that completes bleaching and washing of cooked rags used for making paper: Turns valves or starts electric pump to fill vat with water and specified quantities of lime, alum, and chlorine compounds, to prepare bleaching solution. Dumps rags into solution, using electric hoist, or climbs ladder to open overhead trap to allow rags to be blown into vat. Turns valves to drain solution from vat after specified bleaching time. Fills vat with rinse water by opening tap or starting supply pump. Starts roller or pump to eject dirty water from vat. Drains vat by opening valves.

- 8251-178 BLOW-PIT MAN**(pulp & paper) DPT:685
 blow-tank tender.
 GED: 2 SVP: 3 EC: I 4 6 7 PA: M 2 4

Tends blow-pit or tank that washes pulp to remove cooking acid: Clamps shut, doors and hatches of pit or tank and covers blow-pit floor with specified amount of water by opening valves or using hose. Opens digester outlet valve to blow cooked pulp, under pressure, into pit or tank. Sprays pulp with water from high-pressure hose or turns valves to start overhead showers to wash cooking liquor from pulp. Opens valve to drain spent cooking liquor and water from pulp. Starts pump to pump pulp into receiving chests or storage tank. Retrieves pulp samples from pit or tank for testing in laboratory.

- 8251-180 KNIFE SETTER, CHIPPER MACHINE**(pulp & paper) DPT:684
 GED: 2 SVP: 2 EC: I PA: L 4

Changes and sets knives used in chipper machines that reduce pulpwood to chips: Removes access cover from chipper machine, using wrench. Inspects blades and removes defective ones using hand tools. Removes chips collected between blades and disk wheel, using air hose. Bolts new blades in machine, using hand tools and fixed gauge to obtain accurate setting. May sharpen knife blades, using file or power grinder.

- 8251-182 BLEACH-BOILER TENDER**(pulp & paper) DPT:685
 GED: 2 SVP: 2 EC: I 3 7 PA: M 4

Tends equipment that cleans and bleaches rags used in making paper: Positions end of conveyor over bleach-boiler opening and presses button to start conveyor that carries and dumps rags into boiler. Opens valve to add required amount of water. Pours specified amounts of cleaning and bleaching agents into boiler. Fastens boiler cover and starts agitator to rotate rags. Turns valves to admit steam into boiler to cook rags for specified length of time.

- 8251-186 BROKE-BEATER MAN**(pulp & paper) DPT:685
 pulper.
 GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that reduces broke (trim and rejected paper) or dry pulp sheets to pulp for use in making paper: Dumps broke or dry pulp sheets into machine vat and turns valves to admit water and steam to soften material to specified consistency. Starts beating machine that reduces material to pulp. Opens discharge gate or starts pump to transport pulp to storage or to other processes. May catch pulp in broke boxes and push boxes to beater engines. May push cart loads of broke from paper machines to pulper.

8253-PAPERMAKING AND FINISHING OCCUPATIONS

This unit group includes occupations primarily concerned with operating and tending equipment that makes paper, paper pulp and paperboard from pulp slurry, and imparts gloss and finish to paper. Activities include: forming sheets of wet pulp, drying, pressing, calendering, winding, cutting, glazing and impregnating paper with coating mixtures, and laminating paper with other materials.

- 8253-110 FOURDRINIER-MACHINE OPERATOR**(pulp & paper) DPT:332
 paper-machine tender.
 GED: 4 SVP: 7 EC: I 3 4 5 PA: I 2 4 5 6

Operates wet end of fourdrinier machine to make paper or sheet pulp from pulp stock: Turns valves and adjusts panel controls to start movement of white water and pulp stock into machine head box. Starts machine and turns wheel to adjust flow of stock onto wire-mesh belt on which paper or other product is formed. Observes formation of product and removal

of water. Visually inspects product samples and reviews laboratory reports. Adjusts volume and speed of stock flow, speed and pitch of wire belt, frequency and amplitude of belt shake, water removal by suction boxes and rolls, and pressure of rolls on pulp mats, according to type of pulp stock and kind, grade and weight of product specified. Gives instructions to members of crew for operating machines that dry, size, calender, wind or cut paper products. Directs or assists workers engaged in changing wire belts and felt rolls. Tends auxiliary equipment such as agitators, pumps, and filters. Compiles production records and reports. May adjust, clean, make minor repairs and replace machine parts, using hand tools.

8253-114 CYLINDER-MACHINE OPERATOR(pulp & paper)
DPT:332

wet-machine tender.

GED: 4 SVP: 7 EC: I 3 4 5 PA: L 2 4 5 6

Operates wet end of cylinder-type machine to make paper, or sheet pulp from pulp stock: Turns valves to start flow of water and specific types of pulp stock into designated cylinder vats. Starts machine and turns handwheels and valves or adjusts panel controls to regulate flow of stock onto wire mesh of revolving pickup cylinders, and onto wet felt mats on which continuous sheets of product are formed. Inspects products, reviews laboratory reports, and observes machine operations to determine cause of defects in paper. Regulates and co-ordinates stock flow, speed of pickup cylinders and wet felts, water removal by vacuum action of cylinders and by pressure of rolls on pulp mat, according to type of stock and specified kind, grade, weight, and moisture content of product. Directs workers engaged in replacing felts, threading sheets through drier rolls, slitting and cutting sheets to specified dimensions and winding sheets onto roll. Compiles production records and reports.

8253-118 BACK TENDER, PAPER MACHINE(pulp & paper)
DPT:662

GED: 3 SVP: 6 EC: I 3 5 6 PA: L 2 4 5 6

Operates drier, calender and winding sections of fourdrinier or cylinder-type paper-making machines to produce paper and wind it onto rolls: Threads continuous sheet of paper through carrier, drier and calender rolls by hand. Observes charts and gauges and turns valves to adjust steam pressure, temperature of drier and calender rolls, and hot-air rolls and control running speed of sheet. Inspects sheet for defects, such as dirt, slime spots, holes and wrinkles and marks defective portions for removal at rewinding sections. Directs workers engaged in winding and rewinding, slitting and weighing, wrapping and stenciling paper rolls and sheets. May operate size tub, or spray paper with steam, water, or dyes to obtain specified finish. May be designated according to type of machine operated.

8253-122 PAPER-COATING-MACHINE OPERATOR(paper prod.)
DPT:662
GED: 3 SVP: 5 EC: I PA: L 4

Operates one or more machines that coat paper used for graphic duplicating or reprinting of technical drawings: Instructs other workers to fill coating troughs with specified chemical solution, mount paper roll on machine spindle or remove treated roll. Threads paper through coating rollers and drying chambers. Adjusts screws on roller shaft to regulate machine speed and paper tension, using hand tools. Adjusts temperature in drying chamber to regulate drying of paper when chamber is not equipped with thermostatic control. Visually examines coated paper emerging from machine for discoloration and streaks, and feels surface of paper to ascertain if it has adequate moisture content. Cuts paper with knife periodically from processed rolls to obtain specimen for laboratory testing. May be designated according to type of coating applied; for example, Blueprint-Paper-Coating-Machine Operator

8253-126 WINDERMAN, PAPER MACHINE(pulp & paper)
DPT:662

GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Operates winder at dry end of paper-making machine to slit and wind paper from reel onto cardboard cores and make rolls for shipment: Reads production orders and directs workers to position slitting knives, place cores on winder shaft, thread paper through feeding mechanism and wrap paper around cores to start roll. Starts winder revolving, from console, and observes slitting and winding of paper, and adjusts friction brake lever to maintain tension on paper. Observes sheet being wound to locate defects such as dirt, slime spots, holes and wrinkles and marks defective portions with chalk. Verifies perforations, and size and alignment of rolls being formed. Assists other workers to thread paper sheet through drier and calender rolls of paper machine, using air hose. Positions empty reel shaft on paper machine carriage supports, using hoist. Breaks continuous sheet of paper with air or water hose when active reel is filled and blows free end of paper around empty shaft to start new reel. Lifts full reel from paper-machine carriage with hoist, moves it to winding machine and positions it in winder carriage. May observe paper forming on reel and adjust tension and speed of sheet.

8253-130 COATING-MACHINE OPERATOR(paper prod.; pulp & paper)
DPT:362
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates machine to glaze or impregnate paper or paper board with size or coating mixtures such as clay, wax, adhesive, plastic or waterproofing solution: Adjusts spreader rollers and clips or fastens brushes, rollers or scraper blade in machine, using hand tools, to spread coating to specified depth on paper. Loads paper roll on machine-feed rack and threads paper through spreader, tension, pressure and dryer rolls. Turns valves and starts pump to admit specified coating mixture into machine tank. Starts machine and observes paper to detect wrinkles, breaks, and uneven colouring. Turns handwheel or levers to adjust tension of paper and pressure of rollers. Compiles production reports indicating quantities of materials used. Directs helper to assist in positioning rolls and threading paper through machine. May verify thickness of coating with micrometer or by weighing samples. May operate machine in which paper passes through bath of solution instead of through coating application rollers. May be designated according to coating mixture applied; for example, Clay-Coater Operator
Grounding-Machine Operator
Gumming-Machine Operator
Pre-Pasting Machine Operator
Waxing-Machine Operator

8253-134 COMBINER-MACHINE OPERATOR(paper prod.)
DPT:362

laminating-machine operator.

GED: 3 SVP: 4 EC: I 5 6 PA: M 4 5 7

Operates machine to combine two or more continuous sheets of material such as paper, paperboard, foil, and polyethylene film, to form such laminated products as building paper, fibreboard, wall-board, or material from which moisture-proof bags and wrappers are made: Mounts rolls of material in machine, assisted by helper and using hoist. Threads material over and under guide rollers (one sheet over adhesive roller) around cooling drum and onto re-winder core. Starts pumps to transfer adhesive solution from storage tanks to machine. Starts machine, observes gauges, and adjusts controls to maintain temperature and pressure of rollers, temperature of adhesive, filling of cooling drum, functioning of doctor rod (for removal of excess adhesive) and speed of machine. Inspects laminated product by feeling sheet as it is being re-wound, for lumps, tears, scratches, and wrinkles. Makes standard tests periodically to ascertain the specific gravity and viscosity of adhesive solution. Compiles production reports. May operate portable extruder at head of combiner-machine that melts grains of polyethylene into a liquid, extrudes it through aperture, and forms it into a clear sheet for combining with other sheets of material. May be designated according to type of material used; for example, Polyethylene Combiner

8253-138 SUPERCALENDER OPERATOR(pulp & paper) DPT:362
GED: 3 SVP: 4 EC: I 5 PA: M 4 5 7

Operates supercalender machine to impart specified finish to surface of paper:

Positions roll of paper on machine reel stand, using hoist and with assistance of other workers. Fastens collar and alignment guides on shaft to secure roll, using hand tools. Threads paper around feed, calender, and tension rolls, and wraps end around core shaft of rewinder roll. Observes temperature gauge and turns valve to regulate flow of steam to calender rolls. Turns hand wheels to control tension of paper and pressure of rolls. Inspects paper during rewinding for such defects as dirt, slime spots, or wrinkles, and to ensure compactness of winding. Compiles daily production reports. May hold sandpaper against revolving rolls to remove lint and dirt.

8253-142 HIGH-DENSITY-FINISHING OPERATOR(pulp & paper) DPT:382
GED: 3 SVP: 4 EC: I 7 PA: M 4 7

Operates trimming and coating machines that cut to size, paint, and dry sheets of cardboard or insulation board:

Adjusts position and angle of saws, to cut sheets to specified size, using wrenches. Cleans paint brushes using scraper and brush. Adjusts clearance of paint brushes in machine to ensure uniform application without brush marks. Moves controls to start flow of paint to brushes. Turns knobs to regulate drying and cooling temperatures of coating machine to prevent coating irregularities, and scorching of paint. Observes trimming and coating operations and regulates speed of feed conveyor, transfer mechanisms, and discharge conveyor, to prevent jamming, faulty coating, and ragged edges. Removes sheets not meeting appearance or dimensional standards from discharge conveyor. Cleans paint lines and reservoir, using solvent and brushes. Compiles production records. Reports malfunctions to foreman. May set up and operate machines to trim and coat insulation tiles.

8253-146 SUPERCALENDER-OPERATOR HELPER(pulp & paper) DPT:683
GED: 2 SVP: 3 EC: I 5 PA: H 4 6

Helps operate supercalender machine that imparts specified finish to surface of paper:

Drives fork-lift truck to transport roll of paper to machine. Inserts shaft in core of paper, manually or using hoist. Mounts rolls on machine, using hoist and assistance from other workers. Helps operator to fasten collars at ends of roll to align and secure roll in place, using wrench. Removes finished roll from machine, using hoist. Drives fork-lift truck to remove finished roll from machine area. See also definition for term title, 02-160 HELPER (any ind.). May help operator to thread paper around feed and calender rolls.

8253-150 PRESS TENDER, INSULATION BOARD(paper prod.) DPT:585
GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends steam-heated, hydraulic press that compresses wood pulp to form insulation board:

Turns steam valve to heat pressing-plates. Presses button to activate press and lower ram as pulp sheets are automatically transferred from forming line onto press plates. Observes temperature and pressure gauge. Raises ram after pressing while pressed board is automatically conveyed out of press and transferred to trimming and painting machine or to humidifier. Maintains daily production records. May measure thickness of pressed boards periodically, using micrometer, to maintain standard quality of product. May tend presses that compress sheets of cardboard or paper to form paperboard and be designated accordingly.

8253-154 LAYBOY TENDER(paper prod.; pulp & paper; print. & pub.) DPT:685
GED: 2 SVP: 3 EC: I 5,PA: H 4 7

Tends cutter and layboy that cuts rolls of paper into sheets and stacks them, performing any combination of the following duties: Inserts steel shaft through core of paper roll. Lifts roll onto machine feed rack, using hoist, and fastens collars on shaft to center and secure roll in position. Positions layboy guide stops and stacking paddles,

using rule and wrench. Observes sheets as they fall into layboy to detect such defects as spots, holes, wrinkles, cockled edges, and dirt, and discards defective sheets. Smooths sheets by hand or compresses sheets using air piston to eliminate air pockets. Places skid under layboy and transfers sheets from layboy to skid. Aligns sheets on skid by tapping edges with hands. Removes full skid, using hydraulic dolly or hand truck equipped with hydraulic lift. Fans sheets or turns up corners to facilitate inspection. Counts sheets and inserts tabs to mark off reams when layboy is not equipped with automatic counter and tabber.

8253-158 PAPER-MACHINE HAND(pulp & paper) DPT:686
GED: 2 SVP: 3 EC: I 5 6 PA: M 3 4

Performs any combination of the following duties at dry end of paper-making machine:

Adjusts paper slitting knives of winder as directed, using hand tools. Slides cardboard cores onto winder shaft, threads paper through feeding mechanism and wraps end around core to begin roll. Examines paper being wound for defects and marks defects with chalk or paper strip. Pulls broke (scrap paper) from drier and calender rolls and winding area. Assists workers in changing paper-making machine clothing such as wire belt and felts. Assists in threading paper sheet through drier and calender rolls. Cleans machinery, equipment and work area, using air and water hoses, detergents, brushes and rags.

May lubricate machines. May truck broke to beater for reprocessing.

8253-162 CARBON-PAPER CUTTER(paper prod.) DPT:585
GED: 2 SVP: 2 EC: I PA: H 4 7

Tends machine that cuts rolls of carbon paper into sheets:

Fastens roll of carbon paper into shaft supports of machine. Selects cutter drum marked with circumference that will cut sheets of specified length. Inserts axle through drum and mounts it in machine, using mallet and wrench. Turns wingnuts to adjust tension (drag) on feed roll to keep paper taut and to prevent wrinkling. Presses switch to rotate drum and observes paper as it passes in front of light or over mirror to detect such defects as pinholes, slits, or thin coating. Inserts strip of paper to flag location of defect for removal later. Feeds sheet of marker paper into winding roll after specified time. Folds cut paper to keep layers intact and unfolds and stacks it on workbench. Copies identifying data such as type and size of paper from work order to work ticket.

8253-166 DRIER TENDER, INSULATION BOARD(pulp & paper) DPT:685
GED: 2 SVP: 2 EC: I 3 PA: L 4

Tends oven drier that removes moisture from finished panels of insulation board:

Turns control knobs on thermostatically controlled heating unit to specified setting. Regulates speed of conveyors to ensure that dried sheet will conform to moisture content specification. Observes passage of panels through drier to detect jamming or scorching.

8253-170 FRICTION-PAINT-MACHINE TENDER(paper prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that applies and dries strip of friction paint to striking area of book match covers and matchbox sides:

Slides roll of cardboard onto machine spindle or loads stack of cards into machine feeding mechanism. Fills machine reservoir with friction paint. Starts machine and adjusts feedwheels, using hand tools, to regulate the spacing and thickness of paint strip. Adjusts steam valve to maintain specified temperature in conveyor-drier. Removes paper dust and dirt from revolving feedwheels, using knife.

8253-174 PAPER COATER(pulp & paper) DPT:685
GED: 2 SVP: 2 EC: I PA: M 4

Tends machine that dyes paper to specified colour:

Pours prepared dye solution into machine receptacle. Loads roll of paper in machine, using hoist. Pulls lever to start machine that brushes colour solution on paper. Replenishes dye solution and loads machine with paper when supply has been depleted.

8253-178 PULP-PRESS TENDER(pulp & paper) DPT:685
GED: 2 SVP: 2 EC: I 3 PA: H 3 4

Tends hydraulic press that compresses laps of sheet pulp to facilitate baling or to remove moisture from pulp sheets prior to further processing:
Pushes loaded truck under hydraulic pressing plate or observes laps of sheet pulp as they move under pressing plate on conveyor belt. Makes adjustments and observes pressure gauges. Verifies that pressed pulp has cleared press or pulls loaded truck away from press to storage or baling area.

8253-180 REELER, WALLPAPER(paper prod.) DPT:685
GED: 2 SVP: 2 EC: I PA: M 3 4

Tends machine to roll printed wallpaper into reels:
Slides cardboard core over windup shaft and locks shaft in machine, using wrench, so that core is engaged by drive rollers. Threads wallpaper through machine and attaches end of paper to cardboard core with tape. Starts machine, observes winding, and adjusts speed and tension controls until reel is complete. Rolls completed reel of wallpaper onto hand truck and transports reel to storage area.

8253-182 REWINDER, PROCESSED PAPER(paper prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that removes excess curl from gummed or treated paper and rewinds it into rolls:
Lifts and positions parent roll of paper on machine support, using electric hoist. Threads paper through horizontal rollers and guides, over diagonal rollers, and fastens end of paper to core on rewind stand. Starts machine, observes operation, and makes necessary adjustments to diagonal and tension rollers, using hand tools or by adjusting set-screws.

8253-186 REWINDER TENDER(paper prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that winds paper from one roll to another to form compact rolls of specified footage or diameter, prior to cutting into sheets or slitting into specified widths:
Slides roll core (tube) on rewind shaft. Threads end of parent roll into feeding mechanism of machine and adjusts friction brake by hand. Wraps end of roll around core or expandable rewind shaft and starts machine. Verifies alignment of rewind roll and adjusts machine, using hand tools. Stops machine, removes rewound roll from shaft, and places it on conveyor.
May space cutting disks on machine shaft, using wrench, when machine is equipped to slit paper as it is being rewound.

8253-190 VARNISHING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that coats paper decals, labels, or other printed matter with varnish:
Fills machine reservoir with varnish. Starts machine and feeds sheets of paper decals, labels, or other printed matter between rollers that coat them with varnish.
May mix varnish according to formula. May adjust control to set specified temperature of drying tunnel.

8253-194 COATING-MACHINE-OPERATOR HELPER(paper prod.) DPT:686
GED: 2 SVP: 2 EC: I 5 PA: M 4

Helps operator to glaze or impregnate paper with wax, size, or other coating mixtures:
Inserts shaft through core of paper roll. Helps operator position roll of paper on machine feed rack, using chain hoist. Clamps shaft in bearings. Slides core on rewind shaft. Helps operator thread paper through machine and tapes end of paper onto rewind core. Splices breaks in paper, using tape. Removes re-wound roll from machine, using hoist and slides shaft from core manually. Cleans wax or other coating mixtures from rollers, using scrapers and cloths. Fills machine tank with coating mixture as required. See also definition for term title, 02-160 HELPER (any ind.).

8253-198 COMBINER-MACHINE-OPERATOR HELPER(paper prod.) DPT:686
laminating-machine-operator helper.
GED: 2 SVP: 2 EC: I 5 6 PA: M 4 6 7

Helps operator to feed machine that combines two or more continuous sheets of material to form laminated paper products:
Moves rolls of material to machine, using hand truck, and inserts shafts through cores of rolls. Assists operator to place rolls on feed rack of machine, using hoists, and secures rolls in position with clamps. Assists in threading material into feed mechanism and splices end of material to that of previous roll with tape. See also definition for term title, 02-160 HELPER (any ind.).
May combine particular type of material and be designated accordingly; for example, Polyethylene-Combiner Helper

8256-INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PULP AND PAPERMAKING

This unit group includes occupations in inspecting, testing, grading and sampling work, as described under the term titles, 02- 170 INSPECTOR (any ind.), 02-430 TESTER (any ind.), 02-150 GRADER (any ind.) and 02-330 SAMPLER (any ind.), concerned with quality control activities in pulp processing, pulpboard manufacturing, and papermaking.

8256-110 LABORATORY TESTER(pulp & paper) DPT:281
laboratory technician.
GED: 4 SVP: 6 EC: I PA: L 4 7

Performs any combination of physical and chemical tests on pulp, paper and process materials, in laboratory, for quality control of production processes:
Determines moisture content of wood chips, using drying oven, and calculates density of chips from water displacement. Dries and weighs pulp stock to determine consistency. Measures freeness quality of pulp stock, using specialized industry testing apparatus. Measures acidity and conductivity of pulp stock, using pH meter and electrical conductivity meter. Performs standard titration analyses on pulp to measure lignin content. Measures viscosity of pulp, using special tube and stop watch. Separates fibres by length with classifying screens, determines proportions by weighing, and examines fibres with microscope. Refines pulp samples in small beater, prepares handsheets (paper test samples), and performs tests for such qualities as bursting, tearing, folding and tensile strengths, using special industry testing machines. Counts dirt specks and shives (wood particles) in unit area of pulp or paper sheet. Measures brightness, colour and opacity of paper with reflectance meter, and smoothness and porosity with porosity meter. Operates special test machine to analyze quality of formation of paper. Burns weighed sample of paper in special tube, collects and weighs ashes to determine quantity of additives in paper. Follows standardized procedures to perform chemical and physical analyses of process materials such as cooking liquor, recovered liquor and lime, and on paper additives such as clay, alum and titanium dioxide. Determines solids and chemical content of mill effluent, and calculates sewer flow rates from charts and meters to measure daily losses. Measures solids and chemical losses through mill smoke discharge. Collects samples, charts and production records. Calibrates and maintains testing equipment in mill and laboratory. Prepares testing chemicals, following standard formulas. Performs other pulp and paper quality tests as assigned. Calculates and graphs test results and writes reports of findings.

8256-112 PAPER INSPECTOR(pulp & paper) DPT:267
roll inspector.
GED: 4 SVP: 6 EC: I 5 PA: L 4 5 6 7

Inspects paper rolls and analyzes test and production reports to maintain quality of paper product:
Examines paper rolls visually for defects such as tears, holes, wrinkles, slime or poor finish. Taps rolls with wooden hammer to detect uneven winding and hard or soft spots. Reviews test reports for indications of substandard production and compares with customer's order for

conformance to specifications. Examines finished rolls for conformance to size, packaging and identification specifications. Evaluates previous test results, machine production data, and variance of other order specifications to determine corrective action required. Discusses process adjustments with production supervisor. Gives directions to workers regarding rejection of substandard production, correction of faults, or salvage of rolls by rewinding, trimming to smaller size, or converting production to order having different specifications. Compiles quality control records.

May review work of paper testers for adherence to prescribed procedures. May investigate customer complaints and suggest remedial action. May inspect paper produced in sheet form.

8256-114 PAPER TESTER(pulp & paper) DPT:364 GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Tests samples of each run of paper produced, using standard testing equipment and procedures, to control quality and uniformity of products:

Weighs sample of specified size, measures thickness with micrometer and calculates density of paper sheet. Dries and reweighs sample to determine moisture content. Counts dirt specks and shives (wood particles) visually on unit area of sample. Examines paper to detect curl or surface fuzziness. Tests samples for bursting, tearing, tensile strength, folding, stiffness strengths, friction, crush resistance, and adhesive quality, following standard procedures, and using special industrial testing machines. Measures brightness, colour and opacity with reflectance meter, and smoothness and porosity with densimeter or porosity meter. Measures oil absorbency rate of paper with stop watch. Prepares composite samples for laboratory testing. Calculates and records data, such as customer specifications, test results, machine speeds and production. Reports abnormal test results to machine operators for corrective action.

May record test or production data on tally board. May perform other specialized tests on specialty papers. May be designated according to product tested; for example,
Newsprint Tester
Paperboard Tester
Sensitized-Paper Tester

8256-118 PULP TESTER(pulp & paper) DPT:364 **stock tester.** GED: 3 SVP: 5 EC: 1 4 5 PA: L 4 7

Tests samples of pulp stock or sheet pulp during production, using standard equipment and procedures, to control quality and uniformity of product:

Collects samples from various production points for testing and prepares composite samples for laboratory. Measures freeness quality of pulp stock, using specialized industry testing apparatus, and calculates consistency by drying and weighing measured amount of pulp. Performs standard chemical analyses to determine lignin and liquor content of pulp. Measures acidity of pulp stock, using pH meter or titration apparatus. Prepares handsheet (paper test sample) from pulp, using cylinder, wire screen, and press, and counts dirt specks and shives (wood particles) visually in unit area of sheet. Measures weight and thickness and calculates density of pulp sheet, using scales, micrometer and slide rule. Tests sample for bursting strength. Calculates and records test results, material flow, machine speeds and other operating data, and reports abnormal test results to machine operators for corrective action.

May test strength of process materials such as cooking liquor or paper additives such as alum. May be designated according to type of pulp tested; for example,
Groundwood-Pulp Tester
Sulphite-Pulp Tester

8256-122 INSPECTOR, PULP(pulp & paper) DPT:367 GED: 3 SVP: 5 EC: 1 PA: M 4 5 7

Inspects each phase of processing in manufacture of pulpwood construction boards, panels, or tiles, by performing any combination of the following duties:

Examines products for surface defects. Verifies thickness, size, and squareness of sample products or location of drilled holes in insulation tiles, using calipers, carpenter's square, square frame, rule, or template. Examines packing materials and observes packing activities to ensure that customer and plant specifications are met, and that products are appropriately labelled for shipment. Notifies supervisor or equipment operators when products do not meet specifications, to facilitate

control adjustments. Prepares reports of defects discovered, origin of defect, shift production, and numbers of rejects, for quality control personnel. Selects samples of products for quality testing by control laboratory.

May be designated according to product tested; for example,
Inspector, Acoustical Tile
Inspector, Fibrous Wallboard
Inspector, Wallboard Siding

8256-126 INSPECTOR, SHEET PAPER(pulp & paper) DPT:367 GED: 3 SVP: 3 EC: 1 PA: L 4 7

Inspects samples of paper or paperboard sheets for conformance to quality specifications:

Verifies dimensions of sheet, using rule, and folds sheet and aligns edges to verify squareness. Places sheet on scale and compares weight with specifications for type and grade of paper or board. Fans stack of sheets and visually examines sheets for defects, such as holes, tears, dirt, streaks or shading. Feels paper surface to detect flaws in uniformity of grain or coating. Removes defective sheets, or marks stack for reprocessing and informs production staff of defects. Compiles quality control records.

8256-130 RAG CHECKER(pulp & paper) DPT:587 **rag inspector.** GED: 2 SVP: 2 EC: 1 7 PA: L 4 7

Examines rags to be used for paper making to verify that they are of specified quality and free from metallic or other attachments:

Feels and examines rags on conveyor belt to ascertain that clips, buttons, and elastic have been removed. Verifies that quality, type, colour and condition of rags meet specified requirements. Discards sub-standard rags and places them in container. Weighs and records weight of rags.

8256-134 PAPER SORTER AND COUNTER(paper prod.) DPT:587 GED: 2 SVP: 2 EC: 1 PA: L 4 7

Sorts and counts paper products such as paper sheets, sandpaper, and abrasive disks:

Sorts sheets of paper, sandpaper, and abrasive disks according to specified grade, examines them for defects, and discards defective pieces. Counts and stacks acceptable sheets and disks, and inserts marker between specified quantities. Segregates sheets and disks according to customer order, and records amount and grade of separate orders.

May feed jogging machine that automatically counts and stacks bundles of product.

8258-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, PULP AND PAPERMAKING

This unit group includes occupations in labouring or other elemental work, as described in the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.) in pulp and papermaking which are concerned with activities, such as, feeding conveyors and hoppers, cutting wet pulp, washing screens, collecting broke, sorting rags, and performing general clean-up duties.

8258-110 LABOURER, RAGS(pulp & paper) DPT:487 **rag sorter.** GED: 2 SVP: 2 EC: 1 7 PA: M 3 4 7

Performs any combination of the following duties to prepare rags for use in making paper:

Moves wooden boxes of rags from storage area to working area, using hand truck. Loads rags on working conveyor, by hand. Cuts buttons, clips, elastic or similar items from rags, using hand shears, power shears, or knife. Segregates coloured rags, placing them in designated containers. Places rags on conveyor leading to dusting machine (thrasher). Removes dusted rags and weighs and records weight of rags. Moves weighed rags to conveyor of cutting machine, using hand truck. Removes cover of bleach boiler, allowing rags to fall into stock

cars. Marks cars according to grade and type of rags and pushes cars to washing machines. Removes washed rags from drainer (seasoning bin) and places them in stock cars and pushes cars to beater room.

8258-114 RAG-THRASHER-AND-CUTTER-MACHINE FEEDER(pulp & paper) DPT:666
GED: 1 SVP: 2 EC: 1 5 PA: M 3 4

Feeds machines that remove dust and cut rags to size preparatory to making paper:
Places rags on feed conveyor leading to thrasher hopper. Removes rags from thrasher after cleaning and places them on conveyor leading to hopper of cutter machine. Examines cut rags from cutter for size and notifies supervisory personnel if knives need adjusting or sharpening. Loosens set-screws to remove knives for sharpening using wrench. Cleans dirt and dust from dust compartments of machines using air hose or by dumping contents of dust receivers into waste containers. May move bundles of rags from storage to machine using hand truck. May compile daily production reports.

8258-118 GRINDER FEEDER(pulp & paper)) DPT:686
GED: 1 SVP: 2 EC: 1 6 PA: H 2 3 4

Aligns logs on feed conveyor and in hoppers of grinder machines to prevent jams:
Aligns logs on conveyor, using picaroon, to assure that logs fall squarely into hoppers of grinding machines and to prevent jamming. Frees log jams in hoppers, using hands, picaroon or crowbar. May put oversized logs aside for re-cutting to required length.

8258-122 BROKE HUSTLER(pulp & paper) DPT:886
beater helper; hydropulper helper.
GED: 1 SVP: 2 EC: 1 5 PA: H 3 4

Collects waste paper and pulp from paper and pulp-making machines and transports to beater machines for reprocessing:
Removes broke (waste paper and pulp) from paper and pulp-making machines and loads it onto hand truck. Pushes or hauls truck to beater and throws broke into machine for reprocessing. Washes pits beneath paper-making machines with water hose and blows dirt and dust from drier rolls, using air hose.
May operate fork-lift truck to transport heavy bales and rolls of waste paper from paper-making machines to beater machines. May dump specified amounts of fillers, such as starch and china clay, into beater vats.

8258-126 CUTTERMAN, WET-MACHINE(pulp & paper) DPT:886
GED: 1 SVP: 2 EC: 1 4 5 PA: M 3 4

Cuts sheets of specified size, from continuous rolls of pulp, and folds sheets to form laps:
Cuts pulp sheets from wet-machine cutter rolls using lap cutter (pointed wooden stick) or other device. Folds sheets to form laps. Piles laps on hand truck or conveyor for transfer to hydraulic press. May assist in threading pulp sheet through press rolls of wet machine.

8258-130 PULP-LOG RECLEANER(pulp & paper) DPT:886
rosser man.
GED: 1 SVP: 2 EC: 1 5 6 PA: M 3 4

Feeds machine that removes bark and dirt from improperly cleaned pulp logs:
Removes logs from conveyor, using picaroon. Starts machine and lifts log onto machine cradle. Moves lever to press log against rotating cutting knives that remove dirt or residual bark. Places cleaned logs onto conveyor manually. Cleans work area, using shovel and broom.

8258-134 SCREEN CLEANER(pulp & paper) DPT:887
GED: 1 SVP: 2 EC: 1 4 5 PA: M 3 4

Performs the following duties in screening ground wood or cooked pulp:
Washes clogged masses of fibres and impurities from screen plates, using water hose. Washes and scrapes sand and sludge from riffles and flow boxes. Helps other workers to remove and replace screen plates.

8258-199 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, PULP AND PAPERMAKING

This group includes pulp and papermaking labourers or other elemental workers, not elsewhere classified, for example, those who load materials such as wood chips, pulpwood, sulphur and limerock, and clean work areas and machines. A typical example of an occupational title covered by this residual group definition is:
Yard Labourer(pulp and paper)

8259-PULP AND PAPERMAKING AND RELATED OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with making pulp and paper and related products. Includes making paper wads used in ammunition manufacture.

8259-110 WAD-COMPRESSOR OPERATOR(explosives) DPT:382

wad moulder.

GED: 3 SVP: 4 EC: 1 5 PA: L 4 7

Operates battery of automatic moulding machines and drying ovens to press and dry cardboard-fibre and wood-flour slurry to form-filler wads for shotgun shells:
Turns valves to fill compressor jackets with slurry and to heat drying ovens. Starts feed tank agitator, wad compressors, and conveyors. Observes moulded wads emerging from compressor punches to detect concave tops indicating fouled punch tip. Unbolts punch tube and cleans accumulated slurry from tip, using compressed air or water. Replaces bent or broken punches, tubes, knock-off fingers, and transfer plates, using hand tools. Weighs specified number of dried wads from each batch of slurry on grain scale and computes quantity of water needed to produce wads of specified weight. Measures thickness of wads, using dial gauge, and adjusts spacing between top and bottom punches to change wad thickness, using micrometers, feeler gauges, and precision gauge blocks. Washes accumulation of slurry from machine using hose.

8259-114 SLURRY MIXER(explosives) DPT:382
GED: 3 SVP: 3 EC: 1 4 PA: M 2 4

Operates mixing equipment to produce slurry for processing into shotgun shell wads:
Dumps bagasse and scrap paper into attrition mill that shreds material. Turns handwheel to adjust hydrobeater blades according to specified slurry consistency and adjusts timer for prescribed cycle. Weighs and measures specified quantities of milled material, wood flour, starch, and dyes according to formula, and dumps ingredients into hydrobeater in prescribed sequence. Drains unabsorbed water from measured quantity into graduated cup to determine slurry freeness and adjusts beating time and water content of next batch accordingly to maintain uniform consistency of batches. Starts pump to transfer slurry into dilution tank. Starts agitator in tank and admits metered amount of water to dilute slurry to specified consistency. Pumps slurry into holding tank.

8259-118 BALERMAN(pulp & paper) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 4

Performs any combination of the following tasks in weighing, pressing, wrapping and tying stacks of paper pulp sheets:
Installs press machine feed guides on hydraulic press to accommodate size of sheets, using rule and wrench. Installs rolls of wire on spindle of baling machine and threads it through feed guides. Places sheet of wrapping paper on scale, sets stack of pulp sheets on wrapper, and adds or removes sheets to obtain stack of specified weight, or tends layboy cutter that cuts pulp into individual sheets and stacks them in piles of specified number of sheets. Positions stack between guides on press machine bed. Moves lever to start hydraulic press to compact bundle to specified size. Places sheet of wrapping paper on top of bundle and folds top and bottom paper over ends. Positions bundle on wire tying machine bed and depresses pedal to start machine to wind and tie wire bands around bundle. Stamps weight and other data on

bundle and shoves it onto conveyor. Moves lever to transport stack of pulp sheets along conveyor to automatic pressing and baling equipment.

machines and auxiliary equipment. Typical examples of occupational titles covered by this residual group definition are:
Pulper-Machine-Utility Man(pulp & paper)
Pulp-Stock Mixer(paper prod.)

**8259-199 OTHER PULP AND PAPERMAKING AND
RELATED OCCUPATIONS**

This group includes pulp and papermaking and related occupations, not elsewhere classified, for example, those who prepare and mould pulp mixtures to make moulded-pulp products, or those who apply specialized knowledge to clean and flush pulp or papermaking

826/827-TEXTILE PROCESSING OCCUPATIONS

This minor group includes occupations concerned with processing textile fibres into yarn or thread, and weaving, knitting and finishing fabrics. Activities include: preparing fibres; spinning, winding and twisting yarn or thread; preparing looms and knitting machines; weaving materials; knitting fabrics or garments; and bleaching, dyeing, finishing and calendering textiles. Occupations concerned with printing designs or patterns on textiles are classified in Minor Group 951, PRINTING AND RELATED OCCUPATIONS. TEXTILE PROCESSING OCCUPATIONS are classified in the following unit groups:

- 8260** Foremen, Textile Processing Occupations
- 8261** Textile Fibre Preparing Occupations
- 8263** Textile Spinning and Twisting Occupations
- 8265** Textile Winding and Reeling Occupations
- 8267** Textile Weaving Occupations
- 8271** Knitting Occupations
- 8273** Textile Bleaching and Dyeing Occupations
- 8275** Textile Finishing and Calendering
Occupations
- 8276** Inspecting, Testing, Grading and Sampling
Occupations, Textile Processing
- 8278** Occupations in Labouring and Other
Elemental Work, Textile Processing
- 8279** Textile Processing Occupations, n.e.c.

**8260-FOREMAN, TEXTILE PROCESSING
OCCUPATIONS**

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in processing textile fibres into yarn or thread; spinning, twisting, winding and reeling textile materials and products; weaving; knitting fabrics or garments; and bleaching, dyeing, finishing and calendering textiles.

**8260-110 FOREMAN, TEXTILE BLEACHING AND
DYEING OCCUPATIONS(knit goods; textile)**

DPT:138

Supervises and co-ordinates activities of workers engaged in singeing, scouring, washing, bleaching, dyeing and rinsing textile products, (Unit Group 8273):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Bleaching
Foreman, Dyeing Room
Soaping-Department Foreman
Supervisor, Dye Department

**8260-114 FOREMAN, TEXTILE FIBRE PREPARING
OCCUPATIONS(syn. fibres; textile)**

DPT:138

Supervises and co-ordinates activities of workers engaged in washing, mixing, blending, picking, carding, lapping, combing, drying, sizing and slashing wool, cotton, flax, jute, hemp and other fibres for spinning, winding and weaving, (Unit Group 8261):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Roving-Department Foreman
Scouring Foreman
Sorting-and-Mixing Foreman
Wool-Sorting-and-Grading Foreman

**8260-118 FOREMAN, TEXTILE FINISHING AND
CALENDERING OCCUPATIONS(knit goods;
textile)**

DPT:138

Supervises and co-ordinates activities of workers engaged in calendering, fulling, shrinking, stretching, drying and waterproofing textile goods, (Unit Group 8275):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly; for example,
Aging-Department Foreman

Calendering Foreman
Stretching Foreman

8260-122 FOREMAN, TEXTILE INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS(knit goods; textile) **DPT:138**

Supervises and co-ordinates activities of workers engaged in inspecting, testing, grading and sampling textile, and concerned with quality-control activities in textiles processing, (Unit Group 8276):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in inspecting a particular product, or at a particular stage of process and be designated accordingly; for example,

Carpet-Inspector Foreman
Cloth-Grader Foreman
Hosiery-Inspector Foreman
Quality-Control Foreman
Weaving-Inspector Foreman

8260-126 FOREMAN, KNITTING OCCUPATIONS(knit goods) **DPT:138**

Supervises and co-ordinates activities of workers engaged in interlacing a strand of yarn or thread in a series of connected loops to make knitted fabrics or products; such as, hosiery, sweaters, lace and garments, (Unit Group 8271):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity or in producing a specific item and be designated accordingly; for example,

Hosiery Foreman
Knitting-Machine Fixer, Head
Looping Foreman
Mending Foreman
Seaming Foreman

8260-130 FOREMAN, TEXTILE SPINNING AND TWISTING OCCUPATIONS(textile) **DPT:138**

Supervises and co-ordinates activities of workers engaged in twisting together short strands to produce a continuous length of thread, or spinning and twisting yarn, thread, twine or cordage to impart such characteristics as strength, texture and resistance, (Unit Group 8263):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Spinning Foreman
Twisting Foreman

8260-134 FOREMAN, TEXTILE WEAVING OCCUPATIONS(textile) **DPT:138**

Supervises and co-ordinates activities of workers engaged in interlacing two sets of yarn or thread to produce fabric, (Unit Group 8267):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular type of product and be designated accordingly,

Endless-Belt-Weaving Foreman

8260-138 FOREMAN, TEXTILE WINDING AND REELING OCCUPATIONS(textile) **DPT:138**

Supervises and co-ordinates activities of workers engaged in winding and reeling yarn, thread, cloth, and narrow fabrics into beams, spools, cards and other devices, or gathering yarn into balls or skeins, (Unit Group 8265):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Preparation-Department Foreman
Quilling-Department Foreman
Throwing-Department Foreman
Warping-Department Foreman

8260-199 OTHER FOREMEN, TEXTILE PROCESSING OCCUPATIONS

This group includes textile processing foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in manufacturing needle (punched) felt. A typical example of an occupational title covered by this residual group definition is:

Felt-Goods Foremen, Needle Process(textile)

8261-TEXTILE FIBRE PREPARING OCCUPATIONS

This unit group includes occupations concerned with operating, tending and feeding a variety of machines that wash, mix, blend, pick, card, lap, comb, draw, size and slash wool, cotton, flax, jute, hemp and other fibers in preparation for further operations, such as spinning, winding and weaving.

8261-110 SLASHER OPERATOR(textile) **DPT:562**
GED: 3 SVP: 5 EC: 1 5 PA: M 3 4 5 6

Operates slasher machine that saturates warp with size and winds sized yarn onto loom beam:

Positions section beams onto creel with aid of helper, using hoist. Gathers ends of warp together and ties warp to corresponding leaders left in machine from previous run. Inserts lease rods between alternate strands of yarn to prevent yarn from sticking together. Lays individual warp ends between teeth of expansion comb for even distribution across loom beam. Turns valves to admit size into vat and steam into drying cylinders. Sets yardage meter, starts machine, and observes flow of warp through machine to detect breaks and tangles in yarn. Disentangles yarn and ties broken ends with fingers. Feels yarn to verify adherence of size to yarn and ensure that yarn is dry but not burned. Inserts lease string in warp yarn and secures yarn ends with tape. Doffs loom beam onto hand truck and replaces with empty beam, using hoist. Observes gauges and recording devices on control panel to ensure equipment is operating normally. Maintains production records.

8261-114 WOOL SCOURER(textile) **DPT:682**
scouring-machine operator.
GED: 3 SVP: 4 EC: 1 4 PA: M 4

Operates scouring train (series of tanks or bowls) to wash, rinse and dry raw wool fibres preparatory to further processing:

Turns valve to fill tanks with water and adds specified quantities of soap, soda and other scouring agents. Turns steam valves to heat solutions to operating temperature. Starts machine that feeds raw wool from hopper into series of cleaning and rinsing tanks to wash, rinse and squeeze wool. Patrols scouring train to detect choke-up at squeeze rolls and removes jammed fibres by hand. Controls flow of scouring agents by turning valves to maintain specified concentration. Starts fans that circulate hot air in dryer and adjusts thermostatic control if wool does not feel dry. Drains and cleans machine.

May feed raw wool into scouring machine hopper by hand. May tend machine that removes foreign matter from raw wool stock by feeding it through pulverizing rollers.

8261-118 COTTON-BALL-MACHINE TENDER(textile) **DPT:685**
GED: 2 SVP: 4 EC: 1 5 7 PA: L 4

Tends one or more machines that comb cotton fibres into sliver and form sliver into balls for surgical and cosmetic use:

Positions roll of cotton on carding machine and threads end through rollers. Starts machine that forms sliver. Threads sliver through rollers of machine that forms balls and ejects them into bag. Adjusts machine to control size and weight of cotton balls, using hand tools. Sets counter and starts ball-forming machine. Removes bag when filled with specified number of balls. Folds flaps and seals bag.

May remove cotton fibres from carding machine, using stripping roller.

8261-122 PICKER TENDER(textile) DPT:685
lapper.
 GED: 2 SVP: 4 EC: I 5 7 PA: VH 3 4

Tends battery of picker-machines that break up and clean cotton, form it into lap and wind lap into rolls:

Starts machine and pulls cord to open gate of hopper through which cotton tufts feed into machine conveyor. Moves lever to regulate weight and length of lap and speed of machine. Observes and regulates speed of conveyor as it feeds machine to prevent jamming. Inserts pin in take-up position and turns end of lap around pin, manually. Lifts roll from machine, weighs it, records weight, places roll on portable rack and removes pin from roll. Cleans and oils machine.

May tend, from panel board, an automatic system including a feed conveyor and a machine that automatically controls the weight, length of lap and speed, drops pin into take-up position and winds lap around pin.

8261-126 STAPLE-PROCESSING-MACHINE TENDER DPT:585
 (textile)
 GED: 2 SVP: 3 EC: I PA: M 4

Tends machines that stretch tow, break tow into staple lengths and crimp resulting sliver:

Ties rope of filaments to filaments in machine or threads rope through guides and tension rollers, heating plates, breaking rollers and crimping devices and into receiving can. Observes operation of machines to detect fibres wrapping around rollers and cuts away tangled fibres with hand snips. Adjusts yardage clock to stop machines when specified amount of fibre is in receiving can. Records production data and writes identification tickets for cans of sliver.

8261-130 BLENDING-MACHINE TENDER(textile) DPT:685
wool blender.
 GED: 2 SVP: 3 EC: I 5 7 PA: M 3 4

Tends machine that mixes textile fibres into uniform blends:

Weights fibres on scale of automatic feeders to regulate weight of fibres deposited on conveyor. Turns valve to regulate flow of oil lubricant onto fibre, according to type of fibres being blended. Loads machine hopper by hand with various types of fibres according to blending instructions. Starts machine and observes flow of fibres through blending machine. Stops machine when rollers become clogged and unclogs them by hand. Cleans machines, using air hose. May mix oil lubricant.

8261-134 CARDING-MACHINE TENDER(asbestos & min. wool; textile) DPT:685
carder.
 GED: 2 SVP: 3 EC: I 5 7 PA: M 3 4 7

Tends carding machines that open, clean, align fibres and convert laps of fibres into slivers:

Mounts lap of fibre on bracket at feed end of machine and threads end of lap through feeder rollers or attaches end to lap in machine by pinching ends together with fingers. Patrols row of machines to detect exhausted laps or sliver breaks. Pieces up broken sliver by rolling and twisting ends with fingers. Removes full spools of fibres and places empty spool in winding position. Cuts sample from spool for quality control. Cleans machine, using air hose and brush, and oils moving parts.

8261-138 CARD STRIPPER(asbestos & min. wool; textile) DPT:685
 GED: 2 SVP: 3 EC: I 5 7 PA: M 3 4

Tends equipment that removes (strips) accumulated wool, cotton, or asbestos fibres adhering to wire teeth of carding and doffing drums, using any of the following methods:

1. Positions stripping roller in brackets of carding machine so that wire teeth of roller project between wire teeth of carding cylinder. Starts machine, allowing stripping roller to revolve rapidly and remove fibre from slowly revolving card cylinder. 2. Moves lever to position built-in stripping roll so that wire teeth contact teeth of cylinder. Opens suction line to draw away lint collected by roll. 3. Places stripper nozzles of vacuum stripper attachment at side of carding

cylinder and doffing drum. Starts machine to move stripper across cylinder, drawing dust with nozzle.

May tend vacuum tanks that collect fibre and lint stripped from carding machines. May maintain cleanliness of work area.

8261-142 DRAWING-MACHINE TENDER(textile) DPT:685
drawing-frame tender.
 GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends machines that draw out, straighten, level and combine wool fibres for further processing:

Positions cans of sliver at feeding end of machine. Threads sliver through guides, gathering eye, rollers, and under fallers. Starts machine and guides sliver into receiving can, or wraps end around spindle that winds it into ball. Observes operation of machines to detect breaks in sliver and pieces broken ends together by hand. Doffs can or balls of processed sliver and replaces empty supply cans or bobbins. Weighs cans or bobbins of processed sliver and marks end with chalk to indicate weight. Cleans rollers with air hose and oils machines.

May be designated according to type of machine operated; for example, Combining-and-Drawing-Machine Tender
 Gill-Box Tender

8261-146 FUR BLOWER(textile) DPT:685
fur-blowing-machine operator.
 GED: 2 SVP: 3 EC: I 5 7 PA: L 4

Tends machine that cleans and disentangles fur fibres used in making felt hats:

Forks fur onto machine feeder. Presses button to start machine that forces fibres through chambers containing air blowers and toothed rollers that clean and disentangle fibres. Feels and examines fibres to determine conformance to quality standards and to detect presence of debris such as sawdust and particles of pelt requiring additional passes through machine. Weighs boxes of fur on scale to determine amount of fur processed. Cleans machine and removes debris, using brush and compressed-air hose.

8261-150 FUR MIXER(textile) DPT:685
devil tender; fur-fibre-mixing-machine operator.
 GED: 2 SVP: 3 EC: I 7 PA: M 4

Tends machine that separates matted fur fibres and blends fibres for use in making felt hats:

Selects bags of fur fibres according to mixture order. Opens bags and dumps material on floor. Mixes fibres with fork and forks material from floor into hopper of machine. Starts machine that forces fibres against teeth of cylinders to separate matted fibres, and blows fibres into air-blending chamber that mixes them. Removes blended fibres from machine and deposits them in bags, boxes or trucks. Cleans machine, using brush, broom and air hose. Lubricates machine, using oil can and grease gun.

8261-154 SIZING-MACHINE TENDER(textile) DPT:685
polisher.
 GED: 2 SVP: 3 EC: I PA: L 4

Tends machine that coats strands of yarn with size to stiffen and strengthen yarn:

Positions yarn bobbins or cheeses and take-up cylinders on spindles of machine. Threads yarn over fingers of tension guides, across size-covered rollers and around cylinders. Determines tension of yarn strands by feeling with hand or using tensiometer. Pulls or releases yarn between tension guides and take-up cylinders to increase or decrease tension. Pours pail of size into trough of machine or turns valve to admit size into retaining trough. Starts machine and observes operation to detect deviation from standard and yarn breakage. Adds size to trough as required. Repairs breaks by tying knot or rewinding yarn end around sizing cylinder. Removes and labels cylinders of sized yarn.

May mix size, following formula.

8261-158 SLUBBER TENDER(textile) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: M 4 7

Tends slubber machines that draw out and loosely twist sliver into roving to strengthen it for subsequent drawing and twisting operations:

Transports cans of sliver to slubber machine, using hand truck. Fastens ends of sliver from full cans to preceding ends by overlapping and twisting ends with fingers, or threads sliver over guide, through rolls and flyers, and onto bobbins. Observes machines to detect empty cans and signal lights which indicate machine stoppage caused by sliver breaks. Pieces broken ends by threading sliver through rollers and flyer and twisting it to end on bobbin. Removes bobbins of roving, placing flyers on top of frame and roving in box truck. Sets empty bobbins on spindles, winds end of roving around them, and replaces flyers. Removes lint and dust from rollers, using brush or air hose, and oils machine. Marks spools of roving with coloured chalk to denote weight and texture.

8261-162 STRETCHING-MACHINE TENDER(textile) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: M 4

Tends machine that stretches continuous synthetic fibre filaments to impart strength and flexibility and combine filaments into tow:

Positions can of filaments at machine, places bobbins of filament on spindle and threads filament through rolls, pins, traveller and onto take-up bobbin or into can. Opens valve to admit steam to heat rolls. Pushes button to start machine, turns dials to control speed of feeding or spinning mechanism and observes processing to detect yarn breaks, machine malfunction or other defects. Stops and clears machine when bobbins or cans are full or when knots, breaks or tangles occur in filament. Transports stretched yarn to specified area, using handtruck. Cleans rolls and machine, using air hose.

May thread filament directly from spinning machine. May record production data.

8261-166 WASTE-MACHINE TENDER(textile) DPT:685
garnett-machine tender.
GED: 2 SVP: 3 EC: I 5 7 PA: M 3 4

Tends machine that opens or shreds and fluffs raw or used materials, such as rags, wool, kapok or hair to facilitate further processing:

Cuts open bags of waste materials. Starts machine and dumps material into feeder that conveys it into picking or shredding rollers at a rate matched to intake of machine. Wraps end of processed material around take-up rollers, or positions handtruck beneath discharge outlet of machine. Observes processing of material to detect clogged rollers and disentangles rollers, using knife or hands. Doffs laps or cans of material or pushes filled handtrucks from discharge outlet of machine. Weighs material and records weight on production records. Lubricates machine and cleans machine and work area.

May tend machine that compresses shredded material into layers for felt, batting or padding. May tend machine equipped with pneumatic conveyors that blow stock into storage bins or subsequent machine hoppers. May be designated according to process or material processed; for example,

Picking-Machine Operator
 Willow Operator

8261-170 STOCK MIXER(textile) DPT:487
batcher.
GED: 2 SVP: 2 EC: I 7 PA: M 3 4

Assembles various types of textile fibres into batches preparatory to blending:

Loads fibres from bins or store rooms into cart by hand, following specifications on batch sheet. Weighs loaded carts, computes tare weight and dumps specified amount of each fibre into chutes or onto conveyors leading to blending machines.

May be designated according to fibre batched; for example,
 Wool Batcher

8261-174 CHOPPING-MACHINE TENDER(syn. fibres) DPT:685
chopped-strand operator.
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that chops strands of fibreglass sliver into staple lengths:

Pulls ends of sliver from creel and feeds sliver into feed rollers of cutter. Starts machine and observes staple lengths as they fall from cutters into vibrating screen, through screen and into container on scale to detect defects. Removes container from scale as required weight is attained, and seals container with gummed tape. Pastes label on container and places it on pallet.

May keep production records of weight of material processed.

8261-178 CRIMPING-MACHINE TENDER(textile) DPT:685
roller-bulking-machine tender.
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that crimps and heat-conditions synthetic fibres to increase bulk and resiliency and to facilitate blending with natural fibres:

Turns valves to regulate heat and to control pressure of feed rollers and stuffing box, according to specifications. Starts machine and observes feeding of fibres between rollers that force fibres through stuffing box where they are compressed. Discharges crimped fibres into conditioning oven, observes fibres emerging from oven to detect substandard crimping and adjusts steam and pressure controls accordingly.

May re-thread ends of broken fibres through rollers. May measure dimensions of sample crimps with gauge. May doff and replace full receiving cans when process is not continuous.

8261-182 CRIMP SETTER(textile) DPT:685
GED: 2 SVP: 2 EC: I PA: M 4

Tends machine that sets crimp in synthetic fibres used in high- bulk yarns:

Conveys material on handtruck and lifts cans onto loading track of machine, manually or using hoist. Adjusts controls to regulate heat and steam. Moves hand and foot controls to start machine that automatically loads, steams, vacuum-dries and unloads material. Removes cans of material from track on delivery side of machine. Feels material to determine if moisture has been removed.

May use thermometer to ensure that material is being heated to specified temperature. May record information such as heat and humidity readings, time involved and production.

8261-186 WOOL OPENER AND DUSTER(textile) DPT:685
fluffer operator.
GED: 2 SVP: 2 EC: I 5 7 PA: H 3 4

Tends machine that fluffs raw wool stock to open fibres and to remove dust and other foreign matter preparatory to scouring:

Transports bales of raw wool stock from storage to work area, using handtruck. Cuts binding cables from bales with bolt cutter and deposits armfuls of raw wool stock into machine hopper. Starts machine and observes operation to detect clogged rollers. Pulls fibres from clogged rollers and removes grease from teeth of rollers, using scraper. Cleans foreign matter from bins beneath machine, using shovel.

8261-190 YARN SOAKER(textile) DPT:685
GED: 2 SVP: 2 EC: I 4 5 PA: M 3 4

Tends vats in which skeins of synthetic or silk yarn are soaked to lubricate, bind or soften the filaments, or remove gum:

—
 Weighs ingredients for soaking solution, according to written formulas. Dumps ingredients into mixing tank, opens valves to admit water, and pushes button to start agitator. Places skeins in vat, manually. Turns valve to admit solution into vat until contents are covered. Opens valve to admit steam until specified temperature is attained and soaks skeins for prescribed time. Starts pump and turns valve, to return usable solution to storage or to permit unusable solution to drain off when soaking is completed. Places yarn on portable drying rack and conveys it to drier machine.

8261-194 BREAKER FEEDER(textile) DPT:686
first-breaker feeder.
 GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Hand-feeds fibre, such as hemp or sisal, into machine that breaks up matted bundles, and oils and straightens fibres preparatory to subsequent machine processing:

Places bundles of fibres from different bales on machine feed conveyor. Observes coarse sliver emerging from machine and varies rate of hand feeding to maintain production of uniform silver of specified weight. Fills feeding tanks with oil emulsion and turns valves to start flow of oil that lubricates, softens, rodent proofs, and preserves fibres.

8261-198 SLASHER-OPERATOR HELPER(textile) DPT:686
 GED: 2 SVP: 2 EC: I 5 PA: H 3 4

Assists in coating warp threads with size and winding warp onto loom beams:

Transfers warp or loom beams to or from machine, using handtruck. Positions beams on creel of machine, using hoist. Assists in passing warp threads through rollers, size pot, and drying rollers, inserting lease rods and strings, and securing yarn ends with tape. Loosens and removes clamps from end of loom beam, using wrench. Lifts loom beam from slasher onto handtruck, using hoist. See also definition for term title, 02-160 HELPER (any ind.).

May mix and cook size in vats according to formula. May turn valves to control flow of size from vat to size pot on slasher machine.

8261-202 STAPLE CUTTER(textile) DPT:686
 GED: 2 SVP: 2 EC: I PA: M 4

Feeds machine that cuts fibres into staple lengths for further processing:

Transports bales of material with handtruck and places them at feed end of machine. Cuts bale bands with hand snips and places loose material on belt that conveys it to cutting blades. Starts machine and observes material falling from cutter to detect fusing due to dull cutting blades. Measures cut material with ruler to verify length and notifies machine fixer when cut material does not meet specifications. Removes full cans from discharge end of machine and replaces with empty ones.

May sort loose stock by size and colour. May stock from several bales to blend fibres.

8263-TEXTILE SPINNING AND TWISTING OCCUPATIONS

This unit group includes occupations concerned primarily with tending machines that twist together short strands to produce a continuous length of thread, or that spin and twist yarn, thread, twine or cordage to impart such characteristics as strength, texture and resistance. Activities include: setting up, and feeding or off-bearing from textile spinning and twisting machines.

8263-110 ROPE-MACHINE SET-UP MAN(textile) DPT:680
 GED: 3 SVP: 6 EC: I 5 6 7 PA: M 3 4

Sets up and maintains in operating order automatic machines that make hemp or synthetic fibre rope:

Installs and aligns dies and gears to produce specified types and sizes of rope, using hand tools. Turns setscrews to vary actions of machines according to type of material used and rope specified.

May make rope by operating and adjusting a rope-twisting machine.

8263-114 COVERING-MACHINE TENDER(textile) DPT:685
rubber coverer.
 GED: 2 SVP: 3 EC: I 5 7 PA: L 4

Tends machine that twists one or more strands of yarn around rubber strands:

Threads narrow strip (ribbon) of rubber through feed rollers and splitting mechanism. Draws ends of rubber through guide and hollow spindles, using hook, and laps ends around take-up package. Positions

yarn supply packages on spindles, threads ends through guides and tensions, and wraps ends around rubber. Sets yardage counter to zero. Starts machine and observes covering operation to detect defective twisting caused by taut or slack yarn, and turns setscrew to adjust tension. Ties broken ends, using knotter. Replaces exhausted supply packages of yarn or rubber, and ties ends to ends in machine. Doffs machine and places empty take-up packages on holders. Adjusts speed of take-up mechanism that controls rubber tension to ensure specified stretch.

8263-118 SPINNING-MACHINE TENDER(asbestos & min. wool; textile) DPT:685
spinning-frame tender.
 GED: 2 SVP: 3 EC: I 5 7 PA: M 3 4 7

Tends spinning frame to draw out and twist roving or sliver into yarn, or yarn into twine:

Patrols work area, observing spinning to detect nearly exhausted supply packages and breaks in yarn, roving, and sliver. Pieces up breaks in yarn, roving, and sliver and replaces nearly exhausted supply packages with full packages. Twists end of material from supply package to material in machine or threads material from supply package through machine guides and drawing rollers. Brushes or uses air hose to remove yarn or lint from drawing rollers, guides, and rails. May doff machine. May be designated according to product spun or type of machine tended; for example, Asbestos Spinner(asbestos & min. wool) Roving-Frame Tender(textile)

8263-122 STRAND-FORMING-MACHINE TENDER (textile) DPT:685
 GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends machine that forms (twists) rope-fibre yarn into strands preparatory to their being laid into rope:

Installs specified size tubes that gather and compress yarn preparatory to twisting. Places specified number of full yarn bobbins on creel. Threads yarn ends from bobbins through holes in register plates that align yarn through gathering tubes and around capstan that maintains tension on strand. Ties end to reel that revolves to twist and form strand. Stops machine to repair yarn breaks. Removes full reel, using hoist.

8263-126 TWISTER TENDER(asbestos & min. wool; textile) DPT:685
warp-twister tender.
 GED: 2 SVP: 3 EC: I 5 7 PA: L 3 4 7

Tends machine to twist two or more strands of yarn together or to insert additional twist into single strand of yarn to increase strength, smoothness, and uniformity of yarn:

Creels machine with bobbins or cones of yarn, following work ticket specifications for colour and type of yarn, or notifies change crew as yarn on supply beam is depleted. Pulls ends of yarn over rollers, through tension guides, traveller or flyer, and laps yarn onto take-up spool. Sets yardage counter at zero and starts machine. Patrols machine to detect yarn breaks and replace exhausted supply packages. Ties broken ends by hand or with knotter, rethreads stopoffs, breaks and untangles yarn. Doffs take-up packages and replaces them with empty spools. Inspects yarn for defective twisting and removes defective take-up packages for reprocessing. Records production and worker identification on ticket.

May clean and lubricate machine rings and separators. May tend machines that twist synthetic fibres, silk, or asbestos and be designated accordingly; for example, Thrower(textile) Uptwister Tender(textile)

8263-130 YARN-TEXTURING-MACHINE TENDER(textile) DPT:685
 GED: 2 SVP: 3 EC: I 5 6 PA: L 4

Tends machine equipped with air-jet chambers through which continuous filament yarn is processed to change texture and increase bulk of yarn:

Creels machine and threads yarn ends through machine guides, over feed rollers, air-jet chambers, tension guides, and drop wires. Loops ends of yarn around take-up package. Turns valves to start flow of

compressed air through jets to blow loops into yarn filaments, changing physical structure of yarn. Observes processing of yarn to detect breaks in yarn and filled take-up packages. Ties broken yarn ends or starts new take-up packages to ensure continuous filament. Pulls lever to stop spindle and doffs full package. May be designated according to kind of machine tended.

8263-134 ROPE TWISTER(textile) DPT:685
rope-coiling-machine tender; rope-twisting-machine tender.
 GED: 2 SVP: 2 EC: 1 5 PA: M 4

Tends one or more machines that twist fibre or synthetic strands, or twine into rope and wind rope onto reels: Selects and mounts reels of ready (strands) or twine on machine according to rope size specified, using hoist. Threads strands or twine from reels through guides to twisting mechanism, and splices strands or twine to lead rope attached to reel. Starts machine and monitors operation to detect defective twisting or winding of rope. Stops machine when counter shows specified length is wound. Cuts rope with knife and binds coil with cord to prevent unwinding. Removes coil of rope from reel.

8263-138 DOFFER(asbestos & min. wool; textile) DPT:686
 GED: 2 SVP: 2 EC: 1 5 7 PA: M 3 4

Doffs bobbins of yarn from spindles of spinning or twisting frames: Stops machine and presses pedal to lower ring bar, allowing yarn to wind around base of spindle to facilitate restarting, or presses brake to stop spindle. Removes full bobbins of yarn from machine spindles, deposits yarn in hand truck, and replaces full bobbins with empty bobbins. Releases pedal to raise ring bar and starts machine, or releases pedal to start bobbin rotating. Pieces up breaks in roving ends or ties breaks in yarn ends. Packs full bobbins in cartons for shipping or pushes loaded hand trucks to spooling area. Identifies gauge of yarn in cartons or hand trucks, using various colours of chalk. Cleans waste from machine, using brush. May change travellers on spinning frames. May doff bobbins from slubber frames.

8263-199 OTHER TEXTILE SPINNING AND TWISTING OCCUPATIONS

This group includes textile spinners and twisters, not elsewhere classified; for example, those who tend machines that twist strands of asbestos fibres into rope. A typical example of an occupational title covered by this residual group definition is:
 Asbestos-Rope Maker(asbestos & min. wool)

8265-TEXTILE WINDING AND REELING OCCUPATIONS

This unit group includes occupations concerned with operating, tending and feeding textile-winding and reeling machines. Activities include: winding and reeling yarn, thread, rope, cloth and narrow fabrics onto beams, spools, cards or other devices; or gathering yarn into balls, burls, or skeins.

8265-110 RUG SETTER(textile) DPT:682
 GED: 3 SVP: 5 EC: 1 PA: L 4 7

Operates setting machine to wind yarn from short spools onto longer spools or loom beams in specified colour arrangement to prepare yarn for weaving rugs: Positions spools of yarn on creel as specified by pattern chart. Threads ends of yarn through reeds, tension devices, and guides. Adjusts tension on yarn. Clamps ends to take-up (long) spool. Starts machine and observes winding for yarn tangles and breaks. Pieces up broken ends, using weaver's knot. Stops machine when specified amount of yarn has been wound, cuts yarn with scissors, places clamp onto spool to hold yarn in place, and replaces spool with empty one. May be designated according to type of rug woven; for example, Axminster Setter

8265-114 DRESSER(textile) DPT:684
warp dresser.
 GED: 3 SVP: 4 EC: 1 5 PA: M 4 7

Operates machine to wind yarn from packages onto reel and from reel onto loom beams to prepare warps for weaving: Places yarn packages on mobile creel. Positions track-mounted mobile creel in front of stationary reel and draws yarn from packages on creel, according to specified pattern. Ties yarn ends into loop and places loop over hook on reel to secure ends for winding. Sets yardage meter to stop machine when specified yardage for section is wound on reel. Inserts lease strings in wound section to keep threads in position for weaving. Prepares next section for winding onto reel by cutting yarn, using knife, and moving creel to align next section with reel. Secures ends of wound section by placing ends under threads of section. Positions loom beam on brackets, using hoist, and secures ends from all sections onto beam. Pulls lever to reverse reel, and pushes button to start yarn winding onto beam. Replaces spent yarn packages on creel with full packages. Doffs full loom beam, using hoist, and places beam in storage for use on looms. May be designated according to product for which warp is prepared; for example, Blanket Dresser Felt Dresser

8265-118 WARP TENDER, AUTOMATIC(asbestos & min. wool; textile) DPT:685
high-speed-warper tender.
 GED: 3 SVP: 4 EC: 1 5 7 PA: L 4 7

Tends high-speed warpers that automatically wind yarn in parallel sheets onto beams, preparatory to dyeing, weaving, or knitting: Examines yarn in creel to ensure that it corresponds to warp pattern sheet specifications for number of yarn ends, arrangement of yarn in creel and yarn size. Alters creel setup to correspond with warp pattern sheet. Threads machine by pulling ends from yarn packages mounted on creel through drop wires and tension-measuring and spreading devices, and fastens them to empty warp beam. Sets yardage counter to record amount of yarn wound, and starts machine. Observes operation to detect yarn breaks which cause machine to stop. Turns beam back to point of break, locates and ties broken ends, cutting excess yarn with scissors. Stops machine when specified yardage is wound on beam, and cuts threads, using scissors. Places gummed tape over ends, or loops ends together to secure them. May doff full beams and set in empties. May replace empty yarn packages. May wind yarn in parallel sheets onto drums or spools. May tend machine that gathers strands of yarn into rope form and winds them into ball and be designated accordingly, Ball-Warper Tender

8265-122 WARP BEAMER(textile) DPT:664
beamer; rebeamer; warper.
 GED: 3 SVP: 3 EC: 1 5 6 7 PA: M 4 5 6 7

Operates machine that winds yarn from several section beams simultaneously onto single loom beam preparatory to weaving: Positions section beams on creel, using hoist. Lays individual yarn ends from each section beam between dents of reed and teeth of expansion comb, following leases in section warps. Tapes yarn ends to loom beam or ties groups of yarn ends into knots and inserts knots into slots of loom beams. Turns knob to set yardage clock as specified. Starts machine and observes yarn to detect slubs, breaks and tangles. Removes slubs with scissors, straightens tangles, and ties broken yarn ends with fingers. Inserts lease string in warp yarn and secures yarn ends with tape. Expands beamer heads to remove warp, using crank. Doffs full loom beam onto hand truck, and replaces beam with empty beam, using hoist. Maintains operating records such as style numbers, yarn breaks, machine down time and yardage beamed. May operate high speed warpers that automatically wind yarn in parallel sheets onto drums.

8265-126 YARN-PLAITING-EQUIPMENT TENDER(textile) DPT:685
 GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends winding and plaiting machines to transfer yarn from cones to bobbins and to plait yarn to form skeins: Sets cones on creel, threads yarn through guides and feed end of winding machine and fastens end of yarn around bobbins. Starts

machine to wind yarn evenly onto slowly turning bobbins. Doffs full bobbins and places them on spindles of plaiting machine, following colour identity chart. Threads ends of yarn through guides on plaiting machine, using hook. Starts machine, feeds ends through rollers into can, and observes plaiting to detect malfunctions. Corrects irregular unwinding of bobbins by cutting off extra lengths of yarn with scissors, and tying cut ends back onto supply bobbin. Doffs full cans of plaited yarn, removes yarn from can and affixes labels to skeins. Packs skeins into box or plastic bag. Oils machines, using oil can. May condition plaited yarn in steam box.

8265-130 WARP-BEAMER HELPER(textile) DPT:675
beamer helper.
 GED: 2 SVP: 2 EC: I 5 6 7 PA: M 4

Assists 8265-122 WARP BEAMER (textile) to operate machine that winds yarn from section beams onto loom beam:
 Mounts section beams on creel of beamer, using hand truck and chain or power hoist. Helps doff and warp loom beams. Observes warp to detect breaks, and ties broken threads. Transports full and empty beams to and from storage area, using hand truck. Checks empty beams for flaws that could damage yarn, and takes faulty beams to repair area. See also definition for term title, 02-160 HELPER (any ind.).

8265-134 LOOM-WINDER TENDER(textile) DPT:685
 GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends winding units attached to looms that automatically wind yarn onto quills, transfer quills to loom shuttles, and strip bunch yarn from expended quills:
 Positions yarn packages on machine creel and threads yarn end through guides, tensions and yarn carrier. Places empty quills in feed tray of winding unit. Patrols aisles between looms to detect malfunctions, such as jammed quills, broken yarn ends, exhausted yarn packages, and unstripped quills in reject tray. Straightens or removes jammed quills, ties broken yarn ends, replaces exhausted yarn packages, strips yarn from rejected quills by hand, and places stripped quills in feed tray. Notifies machine fixer of mechanical defects.

8265-138 QUILLING-MACHINE TENDER, AUTOMATIC(textile) DPT:685
filling winder; universal-filling winder, automatic.
 GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine equipped with automatic quill loading and doffing device that winds yarn from cones or tubes onto quills for use in loom shuttle:
 Loads hopper with empty quills by hand or with electric hoist. Places supply packages on holders and ties yarn ends from packages to ends in machine. Observes winding units to detect breaks in yarn. Ties ends when breaks occur or removes quills and rethreads broken yarn ends through guides. Removes full boxes which receive wound quills ejected by machine, and separates partially filled quills.
 May deliver full quills to looms and return spent quills to quilling machine, using hand truck. May inspect quills for defects, such as broken filament and dirty or damaged yarn.

8265-142 ROVING WINDER, FIBREGLASS(syn. fibres) DPT:685
 GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Tends machine to wind strands of fibreglass sliver into a single strand of roving:
 Gathers strands of fibreglass sliver from creels to form roving, threads roving through guides, and attaches roving to take-up package or laps roving around spindle of winder to form coreless package. Starts machine and observes winding units to detect broken ends and variations in number of ends being wound into roving. Ties broken ends, and increases or decreases ends according to specifications. Observes indicator to determine when package is full. Doffs full packages from machine and packs roving into shipping containers. Weighs roving and records weight. Labels and seals containers.
 May wind bonded glass fibre onto tubes. May load machine with creels.

8265-146 SKEINER(textile) DPT:685
 GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that winds narrow fabrics, such as tape, into skeins:
 Draws fabric ends from box or bag and threads each end through traverse guide, and ties it to reel. Turns dial to set yardage counter that stops machine when specified yardage has been wound. Presses pedal to start machine. Laces string through and around each skein to preserve arrangement and prevent tangling. Pulls lever to contract reel, slides skeins to end of reel, removes skeins from reel, and resets yardage counter.

8265-150 SKEIN WINDER(textile) DPT:685
coner.
 GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that winds yarn from skeins onto packages, such as spools and cones:
 Hangs skeins of yarn on rack and beats out skeins to straighten yarn and facilitate winding. Inspects yarn to detect soil, colour spots, or defective twisting, and discards faulty skeins. Removes reel from machine, wraps skein of yarn around reel, and replaces reel. Cuts tie thread or card holding yarn in place, using scissors. Threads end of yarn through guides, turns it around spool or cone and starts machine. Pieces broken ends or ties new skeins with knotter. Observes winding operation, removes full yarn packages, and replaces them with empty cones or spools.
 May tend machine that winds yarn or thread from supply packages; such as, bobbins, cops, or tubes into skeins and be designated accordingly,
 Reeling-Machine Operator

8265-154 SPLICING-MACHINE TENDER(textile) DPT:685
 GED: 2 SVP: 2 EC: I 7 PA: L 4 7

Tends machine that splices ends of partially filled spools of tire cord, and winds cord from one spool to the other:
 Places spools of cord on machine spindles and pulls ends of cord through holding device under needle of sewing machine. Depresses pedal to start sewing machine that automatically sews ends of cord together, cuts thread at end of sewing cycle, and trims excess ends of cord. Removes spliced ends from holding device. Pulls lever to start spindle that winds spliced cord from one spool to another and to turn table, moving succeeding spindles into splicing position. Doffs full spools of cord as table completes circle. Threads sewing machine by mounting cones of thread on machine spindles, tying thread to thread in machine, and pulling thread through machine guides, tension spring, and needle.
 May splice ends by hand when working with fibreglass.

8265-158 SPOOLER(textile) DPT:685
spooling-machine tender.
 GED: 2 SVP: 2 EC: I PA: S 4

Tends machine that winds textile commodities; such as, bias binding, cloth, cording, piping, rickrack, or tape onto cardboard spools:
 Clamps spool onto spindle of machine. Sets yardage meter, starts machine and guides material onto revolving spool by hand. Cuts material with scissors when spool is full. Removes full spool from spindle and places in container.
 May inspect quality of product over inspecting board equipped with winding device and mirror. May wrap rolls or spools in polyethylene or paper. May weigh rolls or spools and record product data on wrapper and order card. May wind material on paperboard cards by hand or machine and be designated accordingly,
 Card-Winder, Hand

8265-162 THREAD WINDER(textile) DPT:685
 GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that winds thread onto bobbins, spools, tubes or other packages for use on sewing or stitching machines:
 Places empty package on spindle of winding unit, wraps ends of thread around take-up package and cuts off excess thread. Pushes lever to start winding unit which automatically stops when thread breaks or take-up packages become full. Pieces up broken ends, using knotter. Cuts thread with scissors and doffs full packages from winding machine. Removes and discards partially wound packages or those having winding defects from machine. Measures full package with

simple gauge, and turns screws to adjust winding tension if package is not of specified size.
May strip thread residue from bobbins to prepare them for rewinding and be designated accordingly,
Bobbin Stripper

8265-166 YARN WINDER(syn. fibres; textile) DPT:685
reeler.
GED: 2 SVP: 2 EC: I 5 7 PA: L 4 7

Tends machine that winds yarn from one package to another for use in knitting, or weaving machines:
Places supply packages, such as, cones, bobbins, spools, cakes, and pirns, on spindles or holders. Threads ends of yarn from each package through guides and tension device, and attaches them to take-up package. Observes winding units to detect breaks in yarn and ties broken ends by hand or with knotter. Stops machine or winding unit and doffs packages. Inspects yarn packages for defects, and removes loose, tangled or defective yarn by hand. Reports machine malfunctions to supervisor or repairman.
May tend machine that winds yarn through emulsion-filled trough or against paraffin disk to soften or strengthen yarn. May clean and lubricate machine. May specialize in tending a particular type of machine or equipment and be designated accordingly; for example, Balling-Machine Tender
Bobbin Winder
Redrawer(textile)

8265-170 YARN WINDER, AUTOMATIC(textile) DPT:685
spooler operator, automatic; winder, automatic.
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends automatic yarn-winding machine, equipped with knotter and winding units that move around machine, to transfer yarn from bobbins to take-up packages, such as cones, tubes, or cheeses:
Places bobbins in pockets of feeder magazine, and pulls ends of yarn over suction tube opening through which yarn is drawn into knotter. Doffs packages into hand truck when package is filled or observes automatic doffing operation. Replaces take-up packages on spindles. Taps strands of yarn around take-up package to start yarn winding. Presses pedal to stop and control speed of machine, according to flow of work. Notifies machine fixer of malfunctions.

8265-174 BATCHER(textile) DPT:686
cylinder batcher.
GED: 2 SVP: 2 EC: I 4 PA: L 4

Feeds machine that winds cloth onto perforated cylinder to prepare it for dyeing or bleaching:
Winds cloth onto reel to maximum diameter that will fit into dyeing or bleaching machine, and verifies roll diameter, using simple gauge. Removes completed roll from winding machine and places it on truck, using hoist. Pushes truck to dyeing or bleaching area, or to storage to await processing.

8265-178 LINE SPOOLER(sport. & toy) DPT:686
fishing-line spooler.
GED: 2 SVP: 2 EC: I PA: L 4

Feeds machine that winds fishing line onto spools:
Places drum of fishing line on spindle. Slides empty spools on shaft of machine. Turns setscrews to hold spools in place. Threads line through machine handle, over tension blade and onto empty spools. Presses button to start machine that winds lines onto spools automatically. Doffs full spools from machine and labels and packs them in containers.

8265-182 ROPE COILER(textile) DPT:686
rope reeler.
GED: 2 SVP: 2 EC: I 5 PA: H 4

Winds rope onto reel to form coil:
Selects reel according to size of rope, and mounts reel on spindle, using wrench. Trims loose strands from end of rope with knife, and binds end with tape or cord to prevent unraveling. Ties end of rope to reel, and starts machine by pressing button. Guides rope onto reel to ensure even winding. Stops machine and ties coil with cord to prevent

unwinding. Lowers heavy coils onto dolly or pallet, using chain hoist. Slides winding reel out of coil.

8265-186 SCRAY MAN(knit goods; textile) DPT:686
rolling-down-machine operator.
GED: 2 SVP: 2 EC: I PA: H 4

Feeds machine that unwinds cloth from rolls and discharges it into loose or folded form to facilitate further processing.
Transports roll of cloth from storage area to feed end of machine, using hand truck. Inserts metal rod through roll of cloth and lifts cloth into feeding position. Sews end of cloth roll to cloth in machine, using portable sewing machine. Positions truck under delivery roller or swing folding attachment, and starts machine, or observes operation as cloth is fed automatically into auxiliary processing equipment, such as bleaching machine. Observes cloth to detect defective seams, and resews seams to prevent ravelling.

8265-199 OTHER TEXTILE WINDING AND REELING OCCUPATIONS

This group includes textile winders and reelers, not elsewhere classified; for example, those who tend reeling machine to draw yarn or thread over gas flame and singe off lint or fuzz, remove waste from winding machine rollers, wind two or more strands of yarn parallel onto bobbin or tube preparatory to twisting, and tend automatic machines that wind, cut, label and pack embroidery thread skeins. Typical examples of occupational titles covered by this residual group definition are:
Doubling-Machine Tender(textile)
Gas-Reel Tender(textile)
Skein Winder and Packer(textile)

8267-TEXTILE WEAVING OCCUPATIONS

This unit group includes occupations concerned with interlacing two sets of yarn or thread to produce fabric. Activities include: reproducing patterns, preparing jacquard cards, drawing and tying warp, setting looms and weaving plain or figured cloth, lace, carpet or other fabrics on hand or machine looms.

Weaving Preparers

8267-110 through 8267-162

8267-110 BRAID-PATTERN SET-UP MAN(textile) DPT:280
patternman, braid.
GED: 4 SVP: 7 EC: I 5 PA: L 3 4 7

Sets up braiding machine to produce braid of specified size, style or design:
Studies guide, sample, or customer specifications to determine machine settings and size, colour, and arrangement of yarn on carrier spindles. Sets up machine for flat or tubular braid, using hand tools. Removes or replaces carrier spindles to alter crossing order of threads. Adjusts let-off motion to control closeness of threads. Replaces weights in carrier spindles or adjusts springs to control thread tension for different styles. Starts machine and examines braid to verify setup or forwards sample of braid to laboratory for testing. Records settings made for new styles or designs for future reference purposes.

8267-114 LOOM-PATTERN CHANGER(textile) DPT:380
loom changer.
GED: 4 SVP: 7 EC: I 5 7 PA: H 3 4 7

Sets up loom to weave cloth of specified pattern:
Removes warp beam, harnesses, drop wires, and reed, using hand tools. Inspects and adjusts loom components such as gears, cams, shuttle, and stop-motion devices, to determine adjustments required to change weaving pattern. Positions full warp beam, harnesses, drop wires, reed and pattern chain on loom. Levels and aligns shuttle boxes and reed. Ties group of warp ends to cloth beam. Pieces together breaks in yarn and redraws threads through harness to correct

misdraws, using reed hook. Cleans and oils loom before starting new pattern.

May start loom and examine cloth to detect defects and be designated accordingly,
Loom Starter

8267-118 HARNESS PREPARER(textile) DPT:380
harness builder.
GED: 3 SVP: 6 EC: I PA: M 4

Reconditions and prepares harness frames for looms:
Inspects and replaces damaged heddles, slide rods, side hooks and frame hooks. Removes or inserts heddles in harness frame, or drop wires in assembly, for change in cloth style, according to pattern. Determines number of heddles by counting or measuring with gauge. Spaces heddles in sections between heddle-rod hooks.
May clean harnesses.

8267-122 HEDDLES TIER, JACQUARD LOOM(textile) DPT:680
GED: 3 SVP: 6 EC: I PA: M 3 4 7

Prepares pattern control mechanism on jacquard loom, by attaching harness parts to head of loom:
Verifies harness building frame to ensure that harness will fit and hang correctly, and transports it to loom. Ties neck cords to hooks in head of loom or connects cords with wire link. Draws neck cords through metal grids to prevent tangling, ties them to harness cords and reels harness cords through coupling which has been threaded through comber board. Aligns heddle eyes, by placing leveling board on loom and retying harness cords to heddles. Brushes varnish and linseed oil on cord knots to prevent slipping.
May draw harness cords through comber board holes in specified order, gathering ends of cords in bunches and fastening heddles and lingos to other ends of cords. May place drop wires on warp threads.

8267-126 DRAWING-IN-MACHINE OPERATOR(textile) DPT:682
entering-machine operator; loom threader, machine.
GED: 3 SVP: 5 EC: I PA: L 4 7

Operates machine to draw warp threads automatically from warp beam through harness assembly to prepare warp for weaving:
Bolts set-up stand containing warp beam and harness assembly to frame of drawing-in machine. Sets up machine to draw in specified pattern by attaching pattern strip to keys (slender wires) that are threaded through heddle eyes. Starts machine and observes operation of automatic threading device to ensure drawing-in according to pattern. Examines drawn warp for mistakes. Corrects misdraws and draws in selvages, using reed hook. Loops warp ends together to prevent their slipping from harness assembly and tapes ends to warp beam. Unbolts set-up stand and pushes it from frame of machine. Feeds metal strips into pattern cutting machine, and depresses button to cut holes at designated places.

8267-130 PINNING-MACHINE OPERATOR(textile) DPT:682
drop-pinning-machine operator.
GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates machine that positions drop-wires over warp ends according to pattern, to stop loom when thread breaks during weaving:
Positions warp in warp stand manually and combs warp ends over brush roller so ends are spread uniformly under even tension. Inserts lease rods to facilitate operation of thread separating device on unit. Bolts pinning frame into position over warp stand and sets pinning head on frame in place. Adjusts pinning head according to size and dimensions of drop-wires and pattern specifications, using hand tools. Fills magazine with drop-wires and turns hand wheel to pin first drop-wires to check unit setup. Starts machine, turns rheostat to set speed, and observes operation to detect malfunctions. Dismantles pinning head and frame and warp stand to facilitate removal of warp.

8267-134 HARNESS MAN(textile) DPT:680
GED: 3 SVP: 4 EC: I 5 PA: H 3 4

Places new harness assembly and loom beam in loom preparatory to weaving different pattern:
Unbolts reed and drop wires, and unhooks pattern control cords from harness frames to release harness assembly in loom. Removes harness assembly and loom beam from loom by hand, or using hoist. Bolts or screws new reed and drop wires in place on loom. Positions and levels harness frames in loom and connects pattern control cords to frames. Positions loom beam on brackets by hand, or using hoist.
May assemble and place pattern chain on loom. May inspect and replace damaged heddles, slide rods, side hooks, frame hooks, and reeds, using hand tools.

8267-138 DRAWER-IN, LOOM(textile) DPT:684
drawer-in, hand; warp hanger.
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Pulls warp yarn through loom harness and reed for weaving a specified pattern:
Selects warp ends according to colour and sequence indicated on pattern chart. Pulls yarn through drop wires, heddle eyes, and reed dents, using hook. Repairs yarn breaks on loom by tying short piece of thread to each end of broken warp yarn.
May start loom and observe operation to detect defective setup or weaving. May be designated according to type of loom or specific activity; for example,
Drawer-In, Dobby Loom
Smash Hand

8267-142 WARP-TYING-MACHINE TENDER(textile) DPT:685
tie-in man; tying-in-machine knotter.
GED: 3 SVP: 4 EC: I 5 7 PA: L 3 4 7

Tends portable or stationary automatic warp-tying-in machine that ties warp ends from full warp beam to warp in loom in order to resume weaving without repeating drawing-in process:
Divides, combs out and straightens ends of warp from full beam and exhausted beam, and clamps ends in position in tier. Starts and observes machine operation as it picks up corresponding strands from warp beam and loom beam, ties them together and cuts off excess yarn above knot. Stops machine, corrects misalignment of warp yarn, and releases joined strands from machine. Hand-ties ends not tied by machine.
May pull warp through drop wires, harnesses, and reed so knots will not jam assembly and break when loom is started.

8267-146 PATTERN CHANGER, JACQUARD LOOMS(textile) DPT:684
jacquard-loom card changer.
GED: 2 SVP: 4 EC: I 5 PA: M 4

Changes pattern chain on jacquard loom to alter weave design:
Cuts lacing connecting first and last cards of pattern chain on loom, using scissors. Lifts pattern chain from holder brackets onto hand truck and replaces it with new pattern chain. Positions pattern chain over card cylinder of jacquard head and ties end cards together to form endless chain. Examines pattern chains for worn cards or lacing. Cuts lacing from cards and ties in duplicate cards or new cord to replace worn parts.

8267-150 LEASE MAN(textile) DPT:684
GED: 2 SVP: 3 EC: I 5 PA: H 3 4

Arranges yarn ends from full loom beam with corresponding warp ends in loom preparatory to tying of warp ends and resumption of weaving:
Mounts beam in brackets of loom, using hoist. Separates alternate ends of new warp and warp left in loom, according to lease arrangement, and inserts lease rod between strands so their position will be maintained. Pieces together breaks by tying thread to broken end and drawing thread through harness. Transfers loom beam to and from loom, using dolly.

8267-154 WARP TIER-IN(textile) DPT:684
twister-in.
 GED: 2 SVP: 3 EC: I 5 PA: M 3 4 7

Joins warp ends from loom beam and corresponding warp ends from loom harness by twisting ends between thumb and finger:
 Replaces lease strings in new warp with lease rods and ties rods to loom frame to support warp while twisting ends together. Turns hand wheel on loom to raise and lower harnesses to form lease in old warp, and inserts lease rods. Knots warp ends in bunches to prevent tangling and inserts knots of corresponding bunches of old and new warp through twisting hook. Selects corresponding ends from old and new warps and joins them by twisting ends between finger and thumb. Turns take-up roll at front of loom to draw warp ends through drop wires, heddles, and reed. Splices ravelled ends and draws ends through loom, using reed hook.

8267-158 LEASING-MACHINE TENDER(textile) DPT:685
 GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends machine that inserts lease strings to keep warp strands separated in specified arrangement to facilitate drawing-in:
 Positions warp beam in holders, using hoist. Pulls warp ends over lease rod, combs ends to keep them even, turns rod to make warp threads taut, and adjusts weight mechanism governing tension on warp. Threads machine by placing cone of string on holder and drawing string through guides and needle. Presses button to start machine that raises and lowers warp threads and inserts string to keep threads in place and prevent tangling. Observes counter on machine to ensure specified number of warp ends are wound on beam. Removes warp ends from rod, turns warp beam to rewind ends, and secures ends with tape. Lifts warp beam from holder, using hoist.

8267-162 DRAWER-IN-LOOM HELPER(textile) DPT:687
 GED: 2 SVP: 2 EC: I PA: M 4 7

Assists in the preparation of warp for weaving, and removes and replaces loom warp beams:
 Conveys beams of warp from warper, slasher or storage to drawing-in frame, and removes completed draw-in assembly, using hand truck. Assists in positioning harness, reed and drop wires on drawing frame, and fastens ends of warp on frame with clamp bar. Places warp beam on brackets of loom, using hoist, and lays ends in position for drawing-in with reed hook. See also definition for term title, 02-160 HELPER (any ind.)
 May place drop wire on each warp thread in loom when warp thread is not drawn through eyes of drop wires. May specialize in specific type of drawing-in activity and be designated accordingly; for example,
 Beam Man
 Drop-Wire Man

Weavers

8267-182 through 8267-206

8267-182 NEEDLE-LOOM OPERATOR(textile) DPT:682
 GED: 3 SVP: 5 EC: I 5 PA: L 3 4 7

Operates loom to produce needle (punched) felt:
 Selects and bolts specified needle boards to holders, using wrenches. Turns rheostat to synchronize speed of feeder with action of needle board. Places roll of felt bat into feed holder of loom. Aligns bat on conveyor, threads end of bat through needle bed of loom and attaches it to take-up spindle. Starts machine and observes operation to detect malfunctions. Stops machine when specified length of felt is produced. Cuts finished felt from roll, using shears. Replaces worn or broken needle boards, using hand tools.
 May produce textile-backed felt.

8267-186 WEAVER, CARPET(textile) DPT:682
rug weaver.
 GED: 3 SVP: 5 EC: I 5 7 PA: L 3 4 7

Operates one or more looms equipped with pile-wire mechanism to weave carpeting:
 Inserts specified number of pile wires through shed in sequence to produce pile. Forces cop of filling into shuttle, using mallet, and inserts shuttle into loom. Places wax in holder to lubricate pile wires. Presses

button or moves lever to start loom, and observes weaving to detect exhausted filling packages, mispicks, and irregular cutting of pile. Replaces exhausted filling, inserts pile wires into missed loops, and replaces dull cutting blades. Pulls out filling to remove defects in carpeting. Pulls cord to reverse pattern card chain and card cylinder so weaving will resume at place where defect occurred, to maintain pattern continuity. May weave a specific type of carpeting and be designated accordingly; for example,
 Velvet Weaver
 Wilton Weaver

8267-190 WEAVER, CLOTH(textile) DPT:682
loom operator.
 GED: 3 SVP: 5 EC: I 5 7 PA: L 3 4 7

Operates battery of looms to weave cloth:
 Starts looms and observes cloth being woven to detect weaving defects. Removes defects in cloth by cutting and pulling out filling (cross threads). Adjusts pattern chain to resume weaving. Examines looms to determine cause of loom stoppage, such as warp, filling or harness breaks, or mechanical defects. Notifies repairman of mechanical defects. Repairs warp break by tying piece of yarn to broken end and threading yarn through drop wires, heddle eyes, and reed dents, using hook. Repairs filling breaks by pulling out broken filling and pushing shuttle through shed to insert new pick (one filling thread).
 May cut cloth when sufficient yardage has been woven, using scissors. May place quills or bobbins in battery or magazine of loom. May replace empty bobbins in shuttle with full ones. May tend winding units attached to looms that wind filling onto packages. May operate shuttleless looms equipped with filling-carrier needle. May operate loom to produce samples. May operate a specific type of loom or weave a particular type of product and be designated accordingly; for example,
 Dobby-Loom Weaver
 Needle-Loom Weaver
 Sample Weaver

8267-194 WEAVER, JACQUARD-LOOM(textile) DPT:682
 GED: 3 SVP: 5 EC: I 5 7 PA: L 3 4 7

Operates one or more jacquard looms to weave intricately designed cloth, or narrow fabrics such as labels and ribbon:
 Observes weaving to detect exhausted filling packages and defects in cloth resulting from worn cards in pattern chain. Replaces exhausted filling packages and notifies mechanic to change worn cards. Pulls out filling to remove defects in weaving. Mends warp break by tying piece of yarn to broken end. Pulls cord to reverse pattern chain and card cylinder so that weaving will resume at place where defect occurred to maintain pattern continuity.
 May operate loom to weave lace and be designated accordingly,
 Lace Weaver

8267-198 WEAVER, HAND(textile) DPT:684
 GED: 2 SVP: 4 EC: I PA: S 4 7

Weaves sections of loom-woven wool felt bands by hand to finish them or to join them to form continuous felt band:
 Ties selvages together to secure belt. Inspects felt bands and removes loose filling threads. Draws warp threads over and under filling threads, using hook. Cuts warp threads to specified length, using tape measure and shears, and ties or laps warp threads together to join bands. Counts number of filling and warp threads per square inch to maintain specified weave pattern. Draws new filling and warp threads through band to finish band.
 May move filling threads close together with hurdle fork, when weaving narrow belting.

8267-202 AXMINSTER-CARPET WEAVER(textile) DPT:685
 GED: 2 SVP: 4 EC: I 5 PA: L 4 7

Tends automatic looms that weave yarn through backing material to produce axminster carpets and rugs with various coloured designs:
 Starts loom and observes weaving to detect breaks in backing yarn and weaving defects. Stops loom, knots broken ends and corrects imperfections by removing filling yarn back to point where defect began. Pushes lever to actuate chain that carries spools of yarns which are automatically woven into backing material.
 May mount spools on loom.

8267-206 BRAIDING-MACHINE TENDER(textile) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Tends battery of machines that braid yarn into flat or tubular narrow fabrics:
Selects yarn of correct colour and places it on machines, according to work ticket or verbal orders. Threads yarn through guides, tension rollers and braiding point. Pushes button to start machine and places yarn end into receiving can. Patrols battery of machines, observes braiding to detect breaks in yarn and ties or glues broken yarn ends. Doffs full cans or rolls of braided material from machine. Records yardage of braid on production card.
May braid packet around articles such as rope or wire.

Miscellaneous Textile Weaving Occupations
8267-226 through 8267-299

8267-226 JACQUARD-CARD CUTTER(textile) DPT:582
card cutter.
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Operates machine to punch holes in jacquard loom pattern cards following pattern diagram:
Clamps paper pattern diagram to frame on front of machine and positions blank pattern cards in guide under punches. Places automatic marker in line with first row of design marks. Depresses clutch pedal to activate punching head and depresses keys that control cutting dies, following arrangement of holes indicated on pattern diagram. Compares punched cards with pattern to detect cutting errors and pastes paper over holes punched in error. Punches holes that have been omitted from cards, using hand punch. Numbers cards in consecutive order. Duplicates set of pattern cards, using duplicating machine.

8267-230 PATTERN PUNCHER(textile) DPT:582
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Operates punching machine equipped with pantograph mechanism, to punch pattern designs in rolls of paper which control stitching operations of automatic embroidery machines:
Positions and tacks designs onto pantograph pattern board and mounts roll of paper in holder. Pulls levers to start and regulate speed of machine, and to move needles against pattern roll. Marks identifying information on punched roll, using crayon. Operates auxiliary machinery that simultaneously stitches sample design as it punches pattern in paper. Makes additional copies of design by placing punched roll in repeating machine that automatically duplicates design.

8267-234 JACQUARD-CARD LACER(textile) DPT:685
card lacer.
GED: 2 SVP: 2 EC: 1 PA: L 3 4 7

Tends machine that automatically laces jacquard pattern cards with cord to form pattern chain for use on jacquard loom:
Stacks punched pattern cards in sequence, or places cards individually on feed belt. Observes machine operation to ensure cards are spaced evenly and fed singly, according to numerical sequence, into lacing mechanism. Replenishes spools of lacing cord.
May number cards in prescribed sequence, using pencil or hand numbering device. May wire together series of cards in prescribed sequence to make pattern chain.

8267-299 OTHER TEXTILE WEAVING OCCUPATIONS

This group includes textile weavers and related workers, not elsewhere classified; for example, those who tend table-rotary warping machines; prepare narrow fabric warps; change beams, carriages and bobbins on lace-making machines; re-draw threads in loom harnesses; and insert pegs into holes of wooden pattern chains. Typical examples of occupational titles covered by this residual group definition are:
Lace-Making-Machine Preparer(textile)
Loom-Redraw Man(textile)
Peg-Boy, Dobby Looms(textile)

8271-KNITTING OCCUPATIONS

This unit group includes occupations concerned with interlacing a strand of yarn or thread in a series of connected loops to make knitted fabric and articles; such as, lace, hosiery, sweaters, and other garments. Activities include: knitting, crocheting, looping, building pattern chains and setting up, adjusting and repairing knitting and related machines.

8271-110 KNITTING-PATTERN SET-UP MAN(knit goods) DPT:380
GED: 4 SVP: 7 EC: 1 5 6 7 PA: M 3 4 6 7

Builds metal chains, consisting of multi-size pattern plates that control operation of automatic knitting machines, and arranges chains in machine to produce specified design in knitted fabric:
Obtains specifications of new knitting pattern from supervisor. Studies number, type and arrangement of stitches, number of covered strands required and sets up machine accordingly. Determines arrangement of pattern plates on chains. Connects plates to form chain, using pincers. Installs spools on machine and draws ends of strands through knitting mechanisms, using hook. Starts machine and observes operation to detect strand breaks and knitting defects. Varies threading pattern and examines sample to determine which perforations in plates are to be covered to produce specified knit. Records strand sizes and threading pattern.
May cut sample of knitted material for laboratory testing. May make minor repairs to knitting machines. May perforate blank pattern strips to correspond to needle bed spacing. May be designated according to type of machine set up,
Jacquard-Plate Maker

8271-114 KNITTING-MACHINE FIXER(knit goods) DPT:380
GED: 4 SVP: 6 EC: 1 5 6 7 PA: M 3 4 6 7

Sets up, adjusts, and repairs machines to knit hose, socks, garments and cloth according to specifications:
Sets up machine to knit specified colour, style and size of material. Inserts cams, links, buttons or needle jacks in pattern chain according to design chart. Observes operation of machine, and examines knitted material for defects, such as holes and other flaws. Adjusts machine parts, such as gears, cams and brakes. Turns setscrews and handwheel to set counter and synchronize yarn carriers, needles, dividers and sinkers. Repairs or replaces machine parts, such as switches and automatic stopping device, using hand tools. Adjusts tension on take-up mechanism to keep material taut during knitting process. Aligns and straightens needles, sinkers and dividers, using pliers. Files presser blades to required angle, using file and gauge. Cleans and lubricates machine.

8271-118 LOOPER FIXER(knit goods) DPT:380
GED: 4 SVP: 6 EC: 1 5 6 7 PA: M 3 4 6 7

Sets up, adjusts and repairs looping machines, according to specifications and knowledge of machine functions and looping process:
Examines looped hose and machine to determine adjustments or repairs needed. Replaces and aligns worn, bent or broken looper points and needles, using hand tools. Adjusts or replaces trimmer blade that trims seams at specified point. Changes pulleys and belts to increase or decrease speed of looper dial to coincide with speed of worker. Changes gears controlling automatic feeding mechanism, and adjusts width of feeding slot according to thickness of sock or hose to be looped, using hand tools. Sharpens clipper and trimmer blade, using emery wheel. Cleans and lubricates machines.

8271-122 LINKS-MACHINE KNITTER(knit goods) DPT:382
jacquard-machine operator.
GED: 3 SVP: 5 EC: 1 5 6 7 PA: M 4 6 7

Operates and adjusts battery of automatic, link-type (Jacquard) knitting machines to knit garments of specified pattern and design:
Places cards or chains that control operation of machine on machine sprockets. Places cones of yarn on machine spindle, and threads end of yarn through machine guides, tension devices and needle eyes. Adjusts stroke of yarn carrier by turning screws to set carrier stops. Pushes lever to separate needle plates of machine, and hooks stitches of knitted fabric onto needles to serve as base for knitting. Starts

machine and observes operation to detect defective knitting. Ties ends of broken yarn with weaver's knot. Separates needle plates and removes finished fabric from machine.

8271-126 HOSIERY-KNITTING-MACHINE TENDER(knit goods) DPT:585
GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Tends knitting machines that knit stockings or panty hose:
Places yarn cones on spools or spindles of machine that threads yarn through guides, carrier and into needles in needle band of machine. Places welt rod in retaining notch of bar. Turns lever to lower welt bar to knitting position. Pushes yarn carrier into position, and starts machine that automatically adjusts narrowing fingers, yarn carriers and welt-bar assembly. Observes machine operation, and examines hose for knitting flaws. Clips loose threads at welt and toe of completed stocking with scissors. Ties broken threads, using knitter. Counts, bundles and labels hosiery. Replaces and aligns needles and points, using pliers. Records sizes and style number of articles completed.
May clean and lubricate machine.

8271-130 CROCHETER(knit goods) DPT:682
crochet-machine operator.
GED: 3 SVP: 4 EC: I PA: L 4 7

Operates machine to crochet trimmings on knitted garments:
Selects spools of yarn according to specifications, or colour of garment, and mounts spools on holder of machine. Threads needle and yarn carrier or loopers of machine. Depresses pedal to clamp edge of material under presser foot of machine. Starts machine and guides material under crocheting needle. Stops machine, turns handwheel to raise needle from garment, and cuts threads with scissors.

8271-134 LOOPER(knit goods) DPT:682
GED: 3 SVP: 4 EC: I 5 6 7 PA: S 4 7

Operates looping machine to close opening in toe of seamless hose or socks, or join knitted garment parts:
Deposits bundle of articles onto work bench. Pulls lever or depresses pedal to rotate horizontal dial containing looping points, and starts trimming and seaming mechanism. Turns dial to regulate speed of machine. Places each stitch along looping line of garment part or one side of toe over looping points, working against movement of dial. Places stitches of second garment part or side of toe over looping points holding corresponding stitches of first garment part or side of toe. Places stitches on looping points in sequence with curved collar to body of garment when looping contour collars. Removes looped articles from dial of machine. Examines looped seams for defects, and notifies machine repairman. Cuts off loose seam with scissors. Places full yarn spools on holding rack, and threads yarn into machine, using tweezers. Ties yarn from depleted spool to new one to eliminate rethreading machine.
May mark defects with crayon. May be designated according to article looped; for example,
Garment Looper
Hosiery Looper
Sock Looper

8271-138 SEAMLESS-HOSIERY KNITTER(knit goods) DPT:585
GED: 3 SVP: 4 EC: I 5 6 7 PA: L 4 7

Tends automatic circular machine that knits seamless hose:
Places yarn cones or spools on bobbin rack or creel. Threads and ties yarn from new cone or spool to yarn on depleted one to allow continuous operation. Starts machine, observes operation and notifies mechanic of malfunctions. Removes knitted hose from machine, and cuts joining thread with scissors. Pulls hose over inspection form or over hand to examine it for defects, such as holes, runs, picks, missed stitches or faulty knitting. Classifies hose into grades, according to specifications. Counts, bundles, ties and labels hose. Weighs rejects to determine amount of waste. Records weight of hose of first, second and rejected categories. Cleans machine and work area.
May measure overall length of hose, using scale and inspection form. May mark defective portion of hose with crayon. May be designated according to type of hose knitted; for example,
Panty-Hose Knitter
Sock Knitter

Stocking Knitter

8271-142 SURGICAL-PAD KNITTER(knit goods) DPT:685
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Knits fabric from silk or synthetic fibre and elastic thread for use in surgical supports, using electrically-operated knitting machine:
Marks width measurements of fabric to be knitted, and adjusts machine. Places cones of silk or synthetic fibre and elastic thread on spindles, and draws thread through guides and between needles. Presses switches or moves levers to activate machine and knit fabric. Inspects fabric during knitting to ensure conformance to specifications. May tend hand-and-foot operated machine, depressing pedal of carrier, laying elastic thread between stitches, passing thread through each end of stitch, and knotting thread with darning needle to prevent unravelling.

8271-146 WARP-KNITTING-MACHINE TENDER(knit goods) DPT:685
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Tends battery of warp-knitting-machines to knit fabrics for outer or under garments, and patrols area to inspect cloth:
Attaches new warp to corresponding threads of old warp by hand-weaving new threads over and under lease rods, threading yarn through guides with hook, and tying warp ends with fingers. Cuts excess thread from knots, using scissors. Starts machine. Patrols knitting area, and inspects cloth for defects, such as holes, breaks, discolorations and stop marks. Stops machine, ties broken yarn, and replaces broken or damaged needles, using hand tools. Reports unusual defects.
May doff rolls of cloth. May keep record of defects. May specialize in patrolling knitting area to inspect cloth and be designated accordingly, Patroller

8271-150 KNITTER, FULL-FASHIONED GARMENT(knit goods) DPT:685
transfer knitter.
GED: 2 SVP: 4 EC: I 5 PA: L 4 7

Tends knitting machine that increases and decreases stitches at designated places to knit shaped garment parts onto ribbed cuffs or waist bands:
Installs spools on machine, and threads yarn through guides, stop-motion devices, and yarn carriers, using hook. Positions transfer bar over needle bed of machine, pushes stitches from transfer points onto machine needles, and removes transfer bar. Pulls ribbed part up to needle eyes and attaches outer edge of rib to hooked bar of take-up roll. Starts machine that automatically increases stitches to knit garment part. Turns handle or presses pedal to activate narrowing fingers that cause needles to decrease stitches to shape portions, such as shoulders and neck. Replaces defective needles, using hand tools. Notifies mechanic of machine malfunction.

8271-154 NET-KNITTING-MACHINE OPERATOR(knit goods; textile) DPT:682
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Operates knitting machine that makes netting from twine:
Adjusts twine guides and tension rollers to conform with width, length and mesh specification, using hand tools and rule. Places spools of twine on machine creel, and inserts wound bobbins in shuttle containers. Threads twine from bobbins and spools through guides and rollers. Starts machine and guides finished netting through drying oven to cylindrical containers. Stops machine to tie ends of broken twine and to replace empty spools and bobbins. Winds twine on new bobbins. Measures netting shrinkage, using rule.
May inspect net and correct defects. May dye nets, according to specification, by guiding netting through dye tank, drying oven and into containers.

8271-158 KNITTING-MACHINE TENDER(knit goods) DPT:665
knitter.
 GED: 2 SVP: 3 EC: I 5 7 PA M 4 5 7

Tends battery of machines that knit fabrics, garment parts or other articles from yarn, such as cotton, wool, nylon or rayon:

Installs spools on machine and ties end of yarn to strand in machine, or threads yarn through guides, tension springs, stop motion devices and carrier or needles, using hook. Starts machine and laps end of knitted goods around take-up roller. Observes knitting for defects, such as yarn breaks and exhausted packages. Notifies mechanic of unusual defects. Cuts knitted fabric with scissors, and signals helper to doff roll of cloth from machine. Records number and weight of rolls and attaches slip to roll. Cleans machines and work area.

May replace defective needles, using hand tools. May specialize in tending a particular type of machine, and be designated accordingly; for example,

Circular Knitter
 Flat Knitter
 Jersey Knitter

8271-162 THREADER(knit goods) DPT:684
 GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Assembles bobbins and threads yarn through needles of machines to knit lace, binding and decorative goods:

Removes paper covering from warp spools mounted on machine, or places yarn-filled bobbin in carriage. Turns spools or bobbins to align yarn ends. Cuts tape holding warp threads at intervals, using scissors. Loops bobbin threads over hooked needle, and draws thread through carriage eye, or loops yarn ends over sley points (guides), and pulls them to front of machine. Draws yarn through open hooks of needles or guides, using threader and dobber, and ties ends in bunches to facilitate handling. Sorts and separates carriages according to spring strength to ensure adequate fitting in machine.

8271-166 CHAINMAN(knit goods) DPT:684
 GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Assembles pattern chains that control pattern-forming motion of guide bars on knitting machines:

Selects pattern-chain links according to pattern diagram. Marks links according to sequence in chain, using square and scribe. Holds link against electric grinder to bevel end down to marking so link will smoothly adjust guide bars. Assembles links to form pattern chain by inserting connecting pins through holes in links.

8271-170 TOPPER(knit goods) DPT:684
 GED: 2 SVP: 2 EC: I 5 PA: S 4 7

Separates garment parts, loops and cuts stitches, and unravels rows of fabric:

Loops stitches of knitted garment parts on joints of transfer bar to facilitate transfer of garment part to needle of looping machine. Cuts several stitches and unravels rows of surplus fabric between points and edge of fabric to separate garment parts. Piles garment parts according to size and colour.

May assist other workers to doff machine.

8271-174 KNITTING-MACHINE-TENDER HELPER(knit goods) DPT:686
knitter helper.
 GED: 2 SVP: 2 EC: I 5 7 PA: M 4 7

Helps other worker in tending battery of machines that knit fabrics, garment parts, or other articles from yarn; such as, cotton, wool, nylon or rayon:

Installs spools on machine, and ties yarn ends from supply cones to ends on exhausted cones. Cuts knitted cloth with shears, and doffs cloth rolls from machine, using chain hoist. Trucks cloth rolls from knitting area. Cleans machines and work area. See also definition for term title, 02-160 HELPER (any ind.).

8271-199 OTHER KNITTERS

This group includes knitters, not elsewhere classified; for example, those who smooth out wrinkles in knitted garments; stitch garment parts together, trim articles with decorative stitches; crochet collar, pockets, waist band and other trimming parts; finish button holes; and change knitting machine trough pads.

Typical examples of occupational titles covered by this residual group definition are:

Former(knit goods)
 Hand Crocheter(knit goods)
 Pad Changer(knit goods)

8273-TEXTILE BLEACHING AND DYEING OCCUPATIONS

This unit group includes occupations concerned with bleaching and dyeing cloth, thread, yarn or other textile products. Activities include: operating or tending equipment to singe, remove sizing, scour, wash, bleach, dye and rinse material. Dyeing occupations concerned with changing the colour of individual items of wearing apparel or textile furnishings are classified in Minor Group 616, APPAREL AND FURNISHINGS SERVICE OCCUPATIONS.

8273-110 MASTER DYER(knit goods; textile) DPT:181
head dyer.
 GED: 5 SVP: 7 EC: I PA: L 4 7

Prepares dye formulas to conform with customer and plant specifications:

Compares customer samples with standard colour chart to identify colour. Selects formula sheet which corresponds with standard colour chart, or selects formula closest to desired shade and adjusts it as necessary to produce required properties and shade at lowest cost. Schedules production according to colours required, processes used, and type of goods to ensure efficient production in dyeing department. Develops new colours and dyes, following standard laboratory techniques. Requisitions dyestuffs and materials needed for each order.

8273-114 DYE-RANGE OPERATOR(textile) DPT:582
continuous-dyeing-machine operator.
 GED: 3 SVP: 5 EC: I 3 4 PA: M 4 7

Operates dye-range machine consisting of pre-dyer, dye pad and hot flue to condition, dye and dry fabric in continuous process:

Mounts and removes rolls of fabric at feed and delivery ends of machine, using power hoist. Sews cloth end to lead cloth in machine. Turns handwheel to adjust cloth-guides. Adds preweighed dye solution to mixing tank on unit and mixes with water. Turns valves to admit dye to dye pad from mixing tank. Sets thermostats to control temperature of dye in padder and hot air in drying box. Starts machines, observes control panel and turns knobs to synchronize individual motor speeds. Reads yardage clock and records production, lot numbers, and running time. Turns valve to drain dye from pad and cleans padder and steambox with water hose.

8273-118 DYE-TUB TENDER(garment & fabric; knit goods) DPT:685
 GED: 2 SVP: 4 EC: I 4 6 7 PA: M 3 4 7

Tends machines to impart desired colour and finish to textile products and knit goods, such as hats, sweaters and hosiery:

Turns valves to admit specified quantity of water and steam into machine. Pours dye, cleaning agents or finishing chemicals into machine, using pail. Turns thermostat and timing device to set temperature and dyeing time according to specifications. Places items in machine or compartments of machine and pushes button to start agitator, or revolving drum. Examines materials from each dye or finish lot and compares with standard to detect variations in colour or finish. Adds additional quantities of dye or finishing chemicals according to instructions, if standard is not matched. Drains solution from machine at end of dyeing or finishing cycle. Places dyed or

finished products in handtruck to await further processing and labels each lot.

May tend rinsing, extracting and drying equipment. May specialize in dyeing a particular item and be designated accordingly; for example, Hat Dyer(garment & fabric)

8273-122 BLEACHER(knit goods; textile) DPT:685
bleaching-machine operator.
GED: 2 SVP: 3 EC: I 4 PA: M 4

Tends machine that bleaches materials, such as textile fibres, yarn, cloth or knit goods, to lighten their colour:

Turns valve to fill machine tank with water to specified level. Measures and adds specified amounts of bleaching chemicals, or turns valves to admit bleaching solution to tank, and starts machine to mix solution with water. Places material on rack, in bags, or onto brackets at feed end of machine. Loads or feeds material into machine by hand or uses hoist to place loaded rack in machine. Starts machine that circulates solution through material or moves material through solution in machine. Opens valves to drain solution from tank on completion of cycle. Unloads machine, by hand or using hoist, and forwards material to next processing stage.

May tend machines that wash textile materials. May perform routine chemical tests on bleaching solution to determine its strength. May bleach a particular type of material and be designated accordingly; for example,

Cloth Bleacher(textile)
Yarn Bleacher(textile)

8273-126 CLOTH DYER(textile) DPT:685
dyeing-machine tender; dye-vat tender; fabric dyer.
GED: 2 SVP: 3 EC: I 3 4 7 PA: L 4 7

Tends machine that treats cloth with dyes to impart required colour:

Turns valve to fill tank with water and adds specified quantity of dye or turns valve to release premixed dye solution into dye machine. Sets thermostat to control temperature of dye solution. Adds designated finishing chemicals to solution, using scoop. Mounts roll of cloth on machine, using power hoist and passes cloth under guide rollers in tank to take-up roll. Starts machine that passes and repasses cloth through dye bath until desired colour is obtained. Cuts sample from cloth after specified time, for colour testing. Opens valve to drain solution from machine. Doffs roll of dyed cloth from machine for further processing.

May sew ends of cloth together to form continuous length, using sewing machine. May tend machines that rinse surplus dye from cloth, or dry cloth. May tend machine that washes, dyes and rinses in automatic cycles. May tend a particular type of dyeing equipment and be designated accordingly; for example,

Dye-Beck Tender
Dye-Reel Tender
Jigger
Padding-Machine Tender

8273-130 KIER-BOILER TENDER(textile) DPT:685
GED: 2 SVP: 3 EC: I 4 7 PA: L 4

Tends kier boiler to bleach greige (untreated) cloth and remove impurities, preparatory to further processing:

Lifts roll of greige cloth with overhead crane and lowers into open kier (vat). Clamps top on kier, using hand tools. Adjusts valves to circulate alkali solution and steam through kier. Sets automatic time and temperature controls, according to instructions. Opens valves to reduce steam pressure, drain solution and flush kier with water. Removes bleached cloth from kier for transportation to drying unit or storage area.

May mix alkali solution in agitator tank, using specified amounts of ingredients, such as soda ash and resin soap.

8273-134 RAW-STOCK DYER(textile) DPT:685
batch dyer.
GED: 2 SVP: 3 EC: I 4 7 PA: H 4

Tends raw-stock-dyeing or bleaching machine to dye or bleach wool, cotton, or synthetic fibre:

Pours pre-measured quantities of dye, bleach or other chemicals into tank. Places rack in machine to support stock during processing, using power hoist. Opens bales and dumps or packs armfuls of loose fibre into machine. Closes machine lid and tightens lugs, using hand tools.

Turns valves to admit steam and water into tank and regulates temperature and steam pressure according to specified gauge readings. Starts pump to circulate solution through stock. Removes rack of fibre after processing cycle, using power hoist.

May tend dyeing kettle equipped with perforated pipe racks to hold and dye tops (combed fibres wound into ball-form) and be designated accordingly; for example,
Top Dyer

8273-138 SINGEING-AND-BOILING-MACHINE TENDER(textile) DPT:685
GED: 2 SVP: 3 EC: I 3 4 PA: L 4

Tends machine that singes and boils greige cloth to remove substances, such as nap, lint, dirt, natural gums, dye and wax:

Sews end of cloth roll to cloth in machine, using sewing machine. Lights gas burners and regulates thermostat to maintain specified temperature of singer. Turns valves to admit caustic solution and steam to vats. Regulates controls to adjust temperature of vats according to standards established for type of cloth being processed. Starts cloth winding from roll past gas singeing flame and onto take-up beams mounted in a series of boil-off and wash-boxes. Threads cloth from terminal wash-box through squeeze rollers and swing-folding attachment. Maintains production records.

May tend auxiliary equipment to dry greige cloth. May tend machine that boils yarn in chemicals to remove foreign matter. May tend equipment that only boils or singes cloth and be designated accordingly; for example,
Boil-Off-Machine Tender
Singeing-Machine Tender

8273-142 TEXTILE WASHER(knit goods; textile) DPT:685
washing-machine tender.
GED: 2 SVP: 3 EC: I 4 PA: M 4

Tends equipment that washes textile materials, such as fibres, yarn, cloth or knit goods to remove impurities or excess dyes and chemicals:

Turns valves to fill washing tanks with water and to control steam for heating solution. Adds detergents and chemicals to tanks following specifications, using pail, ladle or scoop. Places textile material in washing machine by hand, or sews material to lead cloth in machine, using portable sewing machine. Presses button to start machine that circulates wash water through material or starts movement of material through machine for specified period of time. Turns valve to drain solution from tanks, re-fills tanks and repeats cycle, using rinse water. Drains water from machine tanks and unloads materials into hand-truck, manually, or using power reel.

May remove excess moisture from textile material, using extractors or wringers. May turn handwheel to set width guides preparatory to processing cloth in flat open form. May process cloth in rope form to prevent stretching of fabric. May be concerned with a particular type of machine or material and be designated accordingly; for example,
Cloth Washer

Open-Soaper Tender
Wool-Washing-Machine Tender

8273-146 YARN DYER(textile) DPT:685
dyeing-machine tender, yarn; kettle tender, yarn.
GED: 2 SVP: 3 EC: I 4 PA: M 4 7

Tends machines that dye or bleach skeins of yarn or yarn wound on perforated beams, rack or package stand:

Loads package stand, rack or beam of yarn into machine, using power hoist. Turns valves to fill machine container with water and adds specified quantities of dye or bleach to solution. Closes lid and secures fastening devices by hand or using wrench. Adjusts rheostat to control temperature of solution according to specifications. Presses button that starts machine and agitates yarn or solution, to circulate dye or bleach through yarn. Adds processing chemicals during dyeing or bleaching cycle as specified. Withdraws sample of yarn after prescribed time for comparison with standard colour sample. Continues or adjusts treatment as instructed. Turns valve to drain solution from container at completion of dyeing cycle and circulates rinse water through yarn. Opens container lid and removes package stand, rack or beam from machine and forwards yarn to next processing stage.

May dye particular type of yarn package and be designated accordingly; for example,

Beam Dyer
Skein Dyer

Warp Dyer

8273-150 RINSER(knit goods; textile) DPT:685
soaking-machine operator.
 GED: 2 SVP: 2 EC: 1 4 PA: M 4

Tends machines that soak, preshrink and rinse cloth before dyeing or finishing:

Loops cloth over winding reels and threads it through series of guides, so that cloth hangs on reels in folds. Laps end of cloth around take-up roll and turns valves to fill machine tank with water. Starts reel rotating to rinse cloth and to wind it into soaking tanks and onto take-up reel. Threads end of cloth between squeeze rolls to wring water from tubing. Laps end of material around overhead- feed roll for transportation to drying room.

8273-154 TWINE DYER(textile) DPT:685
 GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that dyes twine:

Creels (loads) machine with bobbins of twine. Threads ends of twine through guides, dividing racks, squeeze rollers, and dye tanks. Ties ends of twine to rope and starts machine to draw rope and attached twine through finishing rollers. Stops machine and attaches twine ends to take-up bobbins. Restarts machine and observes operation to detect malfunctions, such as tangled or broken twine. Doffs bobbins of dyed twine and places them on drying rack.

May pour dye from barrel into dye tanks of machine.

8273-199 OTHER TEXTILE BLEACHING AND DYEING OCCUPATIONS

This group includes textile bleachers and dyers, not elsewhere classified; for example, those who tend machines that dye fibre glass yarn under pressure. A typical example of an occupational title covered by this residual group definition is:

Glass-Fibre Dyer(syn. fibres)

8275-TEXTILE FINISHING AND CALENDERING OCCUPATIONS

This unit group includes occupations concerned with operating and tending textile-finishing machines. Activities include: calendering, fulling, shrinking, stretching, drying, waterproofing, aging, napping, mercerizing and coating. Occupations concerned with pressing garments and textiles are classified in Unit Group 6165, **PRESSING OCCUPATIONS**.

8275-110 FIXER, BOARDING ROOM(knit goods) DPT:682
 GED: 4 SVP: 6 EC: 1 PA: L 4

Controls equipment used to shape and dry hose:

Turns valves to admit steam to drying cabinet or boarding forms. Observes gauges during boarding process, and turns valves to increase or decrease steam pressure and temperature of drying chamber or boarding forms, according to type of hose being boarded. Adjusts or replaces malfunctioning, worn, or broken parts, such as linkages, valves, conveyors, or boarding forms, using hand tools. Cleans equipment, using air-hose.

May change toe boards or boarding forms according to size of hose being processed.

8275-114 COATING-MACHINE OPERATOR(textile) DPT:662
rubber and vinyl coater.
 GED: 3 SVP: 5 EC: 1 PA: M 4 7

Operates machine to coat fabric with chemical compounds and to dry coating:

Sews end of fabric to cloth in machine, using sewing machine, or threads end of fabric through rolls of machine. Starts pump to admit solution into trough, or pours compound on cloth directly in front of doctor blade and spreads compound evenly with paddle. Starts machine, watches for skewed cloth, and pushes buttons to control

speed of rollers that hold back or advance selvages to straighten cloth. Measures fabric coming from tenter frame to determine if it has been stretched and dried to specific width, and adjusts distance between tenter chains, accordingly. Regulates speed of machine and temperature of drying cabinet, and adjusts doctor blade according to pattern. Tests viscosity of solution with viscometer, and adds ingredients as required to bring solution to specified viscosity. Directs workers in placing rolls of materials onto feed holder of machine, doffing trucks of dry cloth at swing-folding attachment, mixing coating solution and cleaning machine parts.

May operate coating machine equipped with embossing unit and be designated accordingly; for example,
 Coating-and-Embossing-Unit Operator

8275-118 FINISHING-MACHINE OPERATOR(knit goods; textile) DPT:582
finisher.
 GED: 3 SVP: 4 EC: 1 5 PA: M 4 7

Operates machines that apply finishing solutions, such as size, starch, water repellent, wrinkle resistant or other chemical finishes to fabrics and other materials:

Measures and mixes ingredients for finishing solution in storage vat or can, following formula. Turns valve to admit solution to trough of machine, or pours or dips solution from can into trough. Ties, pins or machine sews ends of material to material in machine, or threads material through rollers, onto tenting frames and drying cans or ovens. Feels finished material to determine degree of dryness, and manipulates controls to regulate speed at which material passes through machine. Observes material finish to determine conformance to standards, and turns handwheel or replaces weights to regulate pressure of rollers or drying cans. Maintains production records on type and quality of material processed. Makes minor adjustments and repairs to machine, using hand tools.

May transport fabrics to and from machine, using hand truck. May work on a particular type of equipment and be designated accordingly; for example,
 Cloth-Finishing-Range Operator
 Mangle Tender

8275-122 PILE-FABRIC FINISHER(textile) DPT:682
 GED: 3 SVP: 4 EC: 1 5 PA: L 4

Operates machine that applies finishing solution to pile, brushes solution into pile and buffs pile to impart smooth and lustrous finish:

Pushes truck of cloth into feeding position and sews end of cloth to leader cloth, using portable sewing machine. Pours solution into trough, and turns steam valve to heat pick-up roller and mix solution. Starts machine and observes cloth to detect inadequate saturation, brushing and buffing as cloth is drawn over solution pick-up roller, between series of brushing rollers and cylinder and under felt buffing roller. Controls quantity of solution transferred to cloth pile, by turning setscrews to lower or raise guide that presses cloth against solution pick-up roller. Moves lever to adjust position of brushing rollers and buffing roller, or to release rollers and disengage tangled or torn cloth. Ravels seams to separate cloth lots, and doffs cloth from machine. Transports rolls to wrapping scaffold, using air-hoist, and wraps rolls with polyethylene or paper, for storage.

8275-126 AUTOCLAVE TENDER(textile) DPT:685
 GED: 3 SVP: 3 EC: 1 PA: M 4

Tends autoclave to preshrink, preset, or age materials, such as yarn and fabrics:

Pushes racks or frames of material inside autoclave and clamps door shut. Regulates time and temperature controls according to written instructions. Presses buttons to start pump to create vacuum in autoclave chamber, and turns valves to admit steam. Observes gauges and pneumatic controller graphs to ascertain that specified pressure, temperature, and vacuum are maintained to ensure conditioning of material, according to specifications, and prevent collapse of autoclave. Closes valves and starts pump to remove moisture at end of steaming cycle. Opens door and removes processed material from autoclave.

May wrap material and paper in layers around rack or frame prior to processing.

8275-130 YARN CONDITIONER(textile) DPT:585
conditioner tender; steam-cabinet operator.
 GED: 2 SVP: 3 EC: I 4 5 PA: M 4 7

Tends steam cabinet that conditions (sets twist or preshrinks) yarn with steam:
 Loads trays or racks of yarn on hand truck. Weighs hand truck to determine tare weight of unconditioned yarn, and pushes yarn into machine. Regulates hand controls to set time, temperature, and humidity, according to specifications. Turns valve to admit steam into cabinet. Removes yarn from conditioner at end of steaming cycle. Reweighs yarn to determine weight increase derived from conditioning. Records data, such as processing temperature, weights, and type of yarn on work ticket. Inspects yarn for twist set and shrinkage. May separate yarn according to size and grade. May condition garments with steam and be designated accordingly; for example, Garment Conditioner
 Overcoat-Conditioner

8275-134 AGER TENDER(textile) DPT:685
aging-machine operator; tower-ager tender.
 GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Tends machine that passes printed or dyed cloth through steam and chemical fumes to develop and fix colours:
 Measures out chemicals and mixes them with water in tank. Trucks cloth to feed-end of ager, and positions empty truck under folding device at finishing end of machine. Sews end of cloth to lead cloth in machine, using portable sewing machine. Observes cloth entering machine to detect defects, such as holes and grease spots. Examines cloth emerging from machine to detect uneven or incorrect colour shade and colour runs, indicating incorrect adjustment of steam and chemical flow. Turns valves to make adjustments in cloth processing as instructed.
 May tend machine that only steams cloth.

8275-138 CALENDER-MACHINE TENDER(asbestos & min. wool; textile) DPT:685
lusterer; roll-calender tender.
 GED: 2 SVP: 3 EC: I PA: M 4

Tends machine that imparts lustre and finish to materials, such as cloth, felt, narrow fabrics, or plastic impregnated fabrics by pressure of cold or heated rolls:
 Places roll of material on brackets of machine, using hoist, and threads end of material between rollers and onto take-up beam. Pulls lever to lower rollers and apply pressure to material. Turns rheostat to set temperature according to specifications for type of material being processed. Turns handwheel to adjust entering guides, according to width of material, and to regulate tension of material. Starts machine and observes passage of material through rollers to detect malfunctions. Feels material at discharge end of machine to determine whether desired finish has been attained. Reprocesses material that does not meet specifications.
 May raise rollers to allow seams or clips to pass. May sew end of new cloth to leader cloth. May process specific type of material and be designated accordingly; for example, Asbestos-Cloth Calenderer(asbestos & min. wool)
 Narrow-Fabrics Calenderer(textile)

8275-142 CAN TENDER(textile) DPT:685
dry-cans operator.
 GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends drying cans that dry fabric following processes, such as dyeing, washing, de-sizing, or finishing:
 Turns valve to admit steam into revolving cans that dry fabric as it is drawn around and between them. Observes temperature gauges to ensure cans do not overheat and damage fabric. Turns rheostat or moves lever to regulate speed of revolving cans to adjust drying time according to fabric thickness. Turns wheel or pulls lever to regulate fabric tension according to type or style of fabric. Verifies drying and finishing process visually and by feeling fabric at discharge end of machine.
 May sew ends of fabric together where the drying function is not part of a continuous process. May tend drying cans that process carpeting.

8275-146 CARBONIZER TENDER(textile) DPT:685
 GED: 2 SVP: 3 EC: I 7 PA: M 4

Tends machines that reduce, char, and wash vegetable matter from woollen cloth:
 Pushes truck into feed position, and sews end of cloth to lead cloth in machine, using portable sewing machine. Adjusts width guides and tension devices manually. Turns valves to admit water and acid to carbonizing and wet-out tanks. Sets thermostat to control temperature in charring unit. Presses button to start machine, and turns dials to regulate cloth speed, according to type of fabric. Observes recording devices to determine strength of acid solution, and admits water or acid to carbonizing tank to maintain uniform strength of carbonizing agent. Feeds end of dried cloth from carbonizer into crushing machine. Disentangles tear-outs, and ravel sewn ends to doff crushed cloth into truck. Feeds cloth into fulling machine to wash carbonized vegetable matter from cloth. Laps end of cloth over reel at end of cycle and starts reel to transfer cloth from machine to handtruck.
 May tend machines that reduce and char vegetable matter from raw wool stock. May immerse felt in acid solution to remove vegetable matter and be designated accordingly; for example, Felt Carbonizer

8275-150 CARPET-DRYING-MACHINE TENDER(textile) DPT:685
 GED: 2 SVP: 3 EC: I PA: L 4 7

Tends machine that dries spools of dyed carpeting:
 Positions spools of wet material on machine brackets, and sews end to lead cloth in machine, using portable sewing machine. Turns switches to regulate speed of intake and exhaust blowers, and temperature of infrared or gas heat units. Starts machine and observes carpet as it emerges from discharge end and winds onto spools or metal rods, to determine if drying meets specifications. Observes gauges on control panel, and moves switches to maintain steam pressure, temperature and speed of machine.
 May set width of pin tenter-frame that carries carpet through dryer and observe feed-in to ensure tenter is functioning correctly.

8275-154 CLOTH SHRINKER(knit goods; textile) DPT:685
cloth sponger; shrinking-machine operator.
 GED: 2 SVP: 3 EC: I PA: M 4 7

Tends machine that shrinks cloth:
 Mounts roll of cloth on machine, using chain hoist, or positions truck at feed end of machine. Sews cloth end to end in machine or threads end of cloth through tension bars, guide and feed rollers, through water vat and over steam pan. Turns handwheels to place guides and set shrinking belt according to width of cloth. Regulates controls on panelboard to start motors and rollers and govern speed of machine. Observes flow of cloth through machine and onto take-up roll to detect processing irregularities. Turns valves and moves switch control to regulate flow of water or steam.
 May doff rolls of cloth from machine or position hand truck under swing-fold device. May operate particular type of processing machine and be designated accordingly.

8275-158 DRYING-MACHINE TENDER(garment & fabric; knit goods; textile) DPT:685
 GED: 2 SVP: 3 EC: I PA: L 4

Tends machine that dries cloth without tension to give cloth a soft hand (feel), or to cure finish applied to cloth:
 Positions trucks of cloth at feed end of machine, or feeds cloth directly from washer. Laps end of cloth over feed roller or ties or sews end of cloth to lead cloth in machine. Turns knob to set temperature control gauge according to instructions. Moves lever to start machine and regulate speed of cloth through drying cabinet. Straightens cloth by hand as it enters machine to remove wrinkles. Doffs rolls of dried cloth at delivery end of machine, or observes automatic swing-fold operation. Cleans machine, using vacuum or air hose.
 May operate particular type of machine and be designated accordingly, Loop-Drier Operator(knit goods; textile)

- 8275-162 FULLER(textile)** DPT:685
fulling-mill operator.
 GED: 2 SVP: 3 EC: I 4 5 PA: M 4 7

Tends fulling-mill to shrink and interlock fibres of woollen cloth by application of moisture, heat and pressure:
 Threads cloth through tension guides or rollers, which control shrinkage in width, between pressure rollers, and through trap which controls shrinkage in length. Sews ends of cloth together to form endless rope, using sewing machine. Turns handwheel to regulate pressure on tension guides, and sets air pressure gauge on rollers and trap, following specifications for style of cloth. Turns valves to admit water and soap solution to tub through which cloth passes. Measures distances between markings on cloth to determine when specified shrinkage has been attained. Ravels seam connecting ends of cloth, and guides cloth over reel into hand truck.
 May tend soaping machine to impregnate cloth with soap solution before shrinking.

- 8275-166 MERCERIZER(textile)** DPT:685
cloth-mercerizer operator.
 GED: 2 SVP: 3 EC: I 4 PA: M 4 7

Tends machine that imparts silk-like lustre to cotton cloth and increases strength of cloth fibres:
 Mounts roll of cloth on machine, and sews end to lead cloth in machine, using portable sewing machine. Opens valve to admit caustic solution into vats and turns handwheel to adjust tenter frame clips to maintain tension on cloth, and prevent shrinkage as cloth passes through spray of caustic water. Regulates thermostat to control temperature of caustic bath. Starts machine and observes flow of cloth through machine units to detect holes or tears in cloth. Observes recording devices on panelboard, and adjusts controls to synchronize motor speeds of machine units.

- 8275-170 NAPPER TENDER(knit goods; syn. fibres; textile)** DPT:685
brushing operator; fleecing-machine operator.
 GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Tends machine that raises fibres on surface of cloth to give cloth soft, fluffy texture:
 Positions truck of folded cloth at entry end of machine. Sews cloth to lead-cloth in napper machine, with surface to be napped contacting napping cylinder. Feeds each lot of cloth through machine for specified number of nappings. Examines and feels cloth to ensure that finish conforms to standards. Ravels seams between cloth lots to allow cloth to fall into cart. Marks lot numbers on cloth with crayon. Turns handwheels to change machine speed and adjust cloth tension according to texture of cloth.
 May specialize in napping a particular type of fabric and be designated accordingly,
 Silk Brusher(textile)

- 8275-174 SPRAYING-MACHINE TENDER(textile)** DPT:685
 GED: 2 SVP: 3 EC: I PA: M 4

Tends machine that sprays and dries finish on felt or fabric:
 Positions roll of material in feed holder of machine, and threads end through rollers. Fills spray gun reservoir with specified dye or latex, and opens air valve to adjust spray on material. Turns knob to admit steam to drying rolls, moves lever to set speed of machine, and starts machine. Observes processing and regulates temperature of drying rolls and blowers that direct hot air over material, as required.
 May sew end of material to piece already in machine, using sewing machine.

- 8275-178 STEAMER TENDER(textile)** DPT:685
cloth steamer.
 GED: 2 SVP: 3 EC: I 3 4 PA: M 4

Tends pressurized, steam-heated chambers to age dyed or printed cloth:
 Winds cloth loosely around large beam, and places beam on carriage, or lifts reel of cloth onto rack, using power hoist. Pushes cloth carriages or racks into steamer, and bolts door, using wrench. Turns valves to admit steam into steam chamber. Adjusts temperature and

pressure gauges according to specifications. Pulls carriages or racks from steamer after specified time.
 May tend miniature steamer to steam samples to determine length of cycle in large steamer, and be designated accordingly,
 Patch-Steamer Tender

- 8275-182 TAR-MACHINE TENDER(textile)** DPT:685
tarring-machine operator.
 GED: 2 SVP: 3 EC: I PA: L 4

Tends machine that waterproofs twine by coating it with tar:
 Pours tar into reservoir, using container. Creels machine with bobbins of twine. Threads ends of twine through tar bath and squeezers and attaches ends to take-up bobbins. Starts machine and observes operation to detect malfunctions, such as broken and tangled twine, and to ensure that specified tension and amount of tar are applied to twine. Doffs tarred bobbins of twine and places them on rack to dry.

- 8275-186 YARN MERCERIZER(textile)** DPT:685
mercerizer-machine operator.
 GED: 2 SVP: 3 EC: I PA: L 4 7

Tends machine that mercerizes yarn in skein form:
 Shakes skeins of yarn to remove tangles, and loads them on rack or roller arms of machine. Starts machine that puts yarn under tension, lowers rack into caustic solution for specified period or passes skeins through solution, and rinses them. Tests caustic solution, using hydrometer, and turns valve to admit soda or water to maintain uniform strength of solution, as specified. Removes skeins from mercerizer, and hangs them on rack for neutralizing. Turns valves to start spray of water and neutralizing solution. Determines when neutralization has taken place, using litmus paper. Weighs and mixes caustic and neutralizing solutions, according to formula.
 May tend equipment to extract moisture from yarn and dry yarn in steam chamber.

- 8275-190 BOARDER(knit goods)** DPT:685
boarding-machine tender.
 GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that shapes and dries hose on forms before or after dyeing process:
 Pulls hose over leg-shaped forms of machine, aligns toe and heel with form, and pulls welt down to specified point on forms. Presses button or depresses pedal to start conveyor that carries filled set of forms into drying chamber, and removes finished set from chamber. Strips shaped hose from boarding forms. Changes toe boards on boarding forms, according to size of hose being processed, using key.
 May feed machine equipped with automatic hose stripping mechanism. May turn valves to increase or decrease steam pressure and temperature of drying chamber.

- 8275-194 BREAKER TENDER(textile)** DPT:685
 GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that passes dyed or printed cloth between knobbled rollers to remove stiffness and give cloth desired hand (texture):
 Slides cloth roll onto machine brackets. Threads cloth over and under alternate rollers that are covered with metal knobs or wavy ridges. Starts machine and observes operation to detect binding of cloth or machine malfunction. Moves lever to regulate speed of machine according to type of cloth being processed. Pushes lever to reverse machine to run cloth through several times until texture meets specifications. Doffs roll of processed cloth from machine by hand.

- 8275-198 CONTINUOUS-PRESS TENDER(textile)** DPT:685
 GED: 2 SVP: 2 EC: I PA: L 4 7

Tends machine that presses cloth to remove wrinkles:
 Sews end of cloth to leader cloth in machine, using portable sewing machine. Turns wheel to adjust guides according to width of cloth, and turns thumbscrew to regulate pressure of steam jacket for type of cloth and finish specified. Starts machine and observes feeding of cloth between roll and steam-heated jacket to detect and remove foreign matter. Stops machine and cuts out damaged cloth, using shears. Places empty truck under swing-spread roller that controls width of finished cloth, and moves full truck to next operation.
 May dampen cloth before pressing.

8275-202 CRABBING-MACHINE TENDER(textile) DPT:685
GED: 2 SVP: 2 EC: I 4 5 PA: L 4

Tends equipment that permanently fixes warp and filling threads in woollen and worsted cloth to prevent uneven shrinkage during subsequent processing:

Sews end of cloth to leader, using portable sewing machine, or threads cloth between rollers and through vats of machine. Wraps end of cloth around take-up roll or guides end through swing-fold attachment and onto hand truck. Turns valves to admit water to vats and to regulate temperature controls according to specifications. Turns setscrews to adjust pressure of top roller. Starts machine, and turns knobs to regulate flow of cloth through vats of boiling water.

8275-206 DECATING-MACHINE TENDER(garment & fabric; knit goods; textile) DPT:685
decator operator; steam sponger.
GED: 2 SVP: 2 EC: I 4 5 PA: M 4

Tends machine that circulates steam through cloth, wound on perforated cylinder, to develop lustre, improve hand (feel), remove wrinkles, and shrink cloth:

Turns handwheels to set guides according to width of cloth, and pressure roll of winding unit according to tension specified. Laps end of cloth and wrapper (protective covering which removes wrinkles and holds cloth under tension) around cylinder, or secures cloth to lead cloth, using pins or staples. Starts machine to wind cloth and wrapper into single roll. Sets controls to admit steam into rotating cylinder and force steam through cloth roll, and to draw air back through cloth to cool and dry it, following instructions for style of cloth. Winds cloth and wrapper onto separate rolls or feeds cloth through swing-fold attachment that automatically folds material into hand truck.

8275-210 DRYING-MACHINE TENDER, YARN(textile) DPT:685
GED: 2 SVP: 2 EC: I 4 5 PA: M 4

Tends machine that dries packages of dyed or bleached yarn by any of following methods:

1. Removes yarn packages from stand or extractor and places them on rack or in drawers of drying oven. Sets temperature control gauges according to specifications, and pushes rack or drawers of yarn into drying oven. 2. Positions loaded yarn stand, removed from dyeing machine, over hot-air port, using power hoist. Sets controls to direct air through holes in yarn stand to dry yarn. 3. Lifts stand of yarn into drier, using power hoist. Closes lid and tightens bolts, using wrench. Sets controls to circulate hot air through yarn. Removes dried yarn from drying machine, inspects packages for dyeing defects, and packs them in cases for storage or shipment. May dry yarn following particular method and be designated accordingly; for example, Oven-Drier Operator

8275-214 EMBOSSING-CALENDER TENDER(textile) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that imparts raised design or finish on coated fabrics by means of heat and pressure from engraved steel rollers:

Adjusts automatic device that regulates heat applied to material by rollers. Positions material to be processed on brackets at feed end of machine. Threads material between rollers and laps end onto take-up tube. Starts machine and moves controls to adjust speed, pressure of rollers, and tension of material. Observes material as it passes through machine to prevent seams, rolled selvages, or trash from damaging rollers. Changes embossing rolls when specifications call for pattern changes, using hand tools.

8275-218 EXTRACTOR-MACHINE TENDER(knit goods; textile) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends extractor machine that removes excess moisture or dye from washed, bleached, or dyed cloth and yarn by any of the following methods:

1. Mounts roll of cloth on brackets at back of machine, using hoist. Pins cloth to leader cloth so that cloth passes over suction tube and between rollers. Starts vacuum pump and opens drain valve. Regulates

roller speed according to thickness of cloth. Places empty truck under swing-folding attachment to receive processed cloth, or doffs rolls of processed cloth that are wound onto take-up reels. 2. Pushes loaded hand truck into position at machine. Loads centrifugal extractor, manually lifting material from hand truck. Distributes material uniformly in extractor to balance load and reduce vibration. Pushes button to close extractor lid, and starts machine. Unloads material into hand truck for transfer to subsequent operator. 3. Places cakes of rayon or other synthetic yarn on spindles of centrifugal extractor, secures lid, and starts machine to remove moisture from yarn.

May extract moisture from cloth, wound on perforated beam, by creating vacuum chamber within beam. May open valve to add water and steam to vat to rinse material preparatory to drying. May tend a particular type of extractor and be designated accordingly; for example, Centrifugal Extractor Vacuum Extractor

8275-222 FELT DRIER(textile) DPT:685
continuous-felt-drier operator.
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends drying chamber that removes moisture from felt strips: Opens steam valves to heat chamber to specified temperature, and regulates air vents in chamber to control ventilation. Sews ends of felt strips together to form continuous strip, using portable sewing machine. Attaches leading edge of felt strip to hooks of conveyor, and starts machine to draw strip through drying chamber. Feeds leading edge of felt through folding machine to fold material into hand truck. Removes key thread by hand to separate felt when hand truck is full.

8275-226 PILE-FINISHING-MACHINE TENDER(textile) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that separates, polishes and raises or flattens pile of fabrics:

Positions truck of cloth or mounts roll of cloth on brackets at entry end of machine, and sews cloth to lead cloth in machine, using portable sewing machine. Turns thermostat to set temperature of cylinder, according to specifications. Starts machine and moves lever to set pressure on hydraulic apron that presses cloth against cylinder to raise or flatten pile, as specified. Compares finished cloth with standard swatch, and notifies supervisor if cloth varies from standard. Observes material passing through automatic swing-fold device and into hand truck, and replaces full hand trucks with empty ones. Ravels seams to separate cloth pieces.

May tend mangle in tandem with machine to apply finish to cloth. May tend machine that sets pile of fabrics, such as corduroy and velvet, by brushing action. May raise and set direction of fibre on surface of woollen cloth. May be concerned with a specific type of equipment or fabric and be designated accordingly; for example, Gig-Machine Operator Steam Gigger Velvet-Brusher Tender

8275-230 PLEATER(knit goods; textile) DPT:685
GED: 2 SVP: 2 EC: I PA: M 4

Tends machine that guides cloth into storage bins or processing trucks in pleat-like folds to prevent tangling during subsequent removal:

Ties end of cloth to lead rope, and threads cloth through poteyes, over rollers, through sleeve of pleating mechanism and into bin or truck. Presses button to start machine, and turns knob to adjust width of pleats and ensure that cloth piles in even layers. Depresses pedal that starts portable sewing machine to sew ends of cloth together, for continuous pleating.

May transport material with truck, for further processing.

8275-234 RAW-STOCK DRIER(textile) DPT:685
GED: 2 SVP: 2 EC: I PA: M 4

Tends machine that dries raw wool, cotton, or synthetic fibres from which excess liquid has been extracted:

Feeds raw stock to conveyor by hand, or turns switch to control vacuum pipe through which stock is fed onto conveyor. Moves lever to regulate speed of screen or apron which carries loose fibres through drying cabinet. Sets gauge to control drying temperature. Feels wool as it is discharged from drier, to determine if drying is complete, and

adjusts conveyor speed accordingly. Cleans equipment, using compressed air and steam.
May dry materials other than raw stock, such as woollen goods.

8275-238 SHEARING-MACHINE TENDER(textile) DPT:685
brusher and shearer; cropper.

GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that shears nap, loose threads and knots from cloth surface to give uniform finish and texture:
Mounts roll of cloth on brackets at feed end of machine, by hand. Pulls end of cloth over and under several feed rollers, under knife blade roller, over brush tension roller, and secures end to take-up beam or swing-fold device that folds material into hand truck. Turns crank to regulate knife blade roller to cut nap to specified depth. Starts machine and observes operation to detect shearing malfunctions. Moves lever to raise knife blade roller to permit seams to pass under blades without being cut. Sews end of cloth to be sheared to end of cloth in machine, using sewing machine.
May convey rolls of cloth to shearing machine. May doff rolls of cloth from delivery end of machine. May tend machine that shears pile from carpet surfaces.

8275-242 SPRAY-COATING-MACHINE TENDER(textile) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that sprays finish on material, such as carpeting and cloth, to increase thickness and bulk of material:
Adjusts air pressure control, observes gauges, and turns knob to start flow of finish from tanks through spray apparatus. Adjusts temperature control and observes gauges to regulate heat in dryer according to temperature chart. Starts machine and observes material passing through spray cabinet to ensure that finish is sprayed evenly on material. Stops machine and readjusts air pressure control, nozzles on spray apparatus, or cleans clogged nozzles if finish is not uniform. Measures material as it leaves drying compartment to detect width shrinkage and adjusts temperature controls as needed.
May place roll of material on holders at entry end of machine, and sew end of material to lead material in machine. May doff rolls of material from machine or push hand truck under swing-folding attachment.

8275-246 STRETCHING-MACHINE TENDER(knit goods) DPT:685

GED: 2 SVP: 2 EC: I PA: M 4 7

Tends machine that stretches and sets knitted cloth to uniform width:
Turns screws to adjust width of spreader, and opens valves to admit steam into steam box that sets stretched cloth. Positions hand truck, and threads cloth over feed and guide rollers, around spreader, through steam box or drying chamber and between pressure rolls. Wraps end of cloth around take-up roll or guides end through swing-folding attachment. Starts machine and observes flow of cloth to detect defects, such as dirt, dye streaks and holes. Measures width of cloth with hand rule, and doffs rolls of cloth from machine. Attaches identification tag to end of cloth bolt, using stapler.
May turn handle to lower top pressure roller that presses cloth. May cut defects from cloth with shears.

8275-248 TENSION-DRYING-MACHINE TENDER(textile) DPT:685

GED: 2 SVP: 2 EC: I PA: M 4

Tends equipment that dries and rewinds fabric, preparatory to further processing:
Mounts roll of fabric, using chain hoist. Threads material around initial roll in let-off rack and through drier, and staples it to front roll shell in wind-up rack. Takes up slack on new roll and aligns material threaded through drier, manually, to ensure straight wind. Starts motor and moves lever to lower pressure roller, pass material through drier and wind it on front roll shell. Adjusts brake on take-up roll as material is winding to maintain specified tension.

8275-250 TENTER-MACHINE TENDER(knit goods; textile) DPT:685

cloth stretcher and drier.

GED: 2 SVP: 2 EC: I PA: M 4

Tends tenter frame that stretches cloth in width, removes wrinkles and dries cloth after processes, such as dyeing or finishing:
Trucks folded cloth to feed-end of machine. Sews cloth end to lead cloth in machine, manually, or using sewing machine. Turns wheel to adjust clips or pins to stretch cloth to specified width. Moves lever to control speed of cloth as it passes through drying cabinet. Measures width of cloth as it emerges from machine, using yardstick.
May read yardage clock and record production. May replace full trucks with empty ones, and ravel seams to separate truck loads of cloth. May tend tenter frame equipped with weft-straightening attachment.

8275-254 TEXTURING-MACHINE TENDER(syn. fibres; textile) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that crimps thermoplastic yarn to increase bulk, add elasticity, and provide yarn with a soft hand (texture):
Places supply package on spindles and threads yarn ends through guides, feed rolls, and into crimping attachments. Pulls yarn ends from heater boxes of crimping attachments, using wire hook, threads ends through guides, and attaches them to take-up packages. Ties broken yarn ends by hand or using knoter, and reports malfunction of machine to fixer. Doffs full yarn package.
May wrap yarn packages in paper and pack packages in shipping containers.

8275-258 TUMBLER TENDER(knit goods; textile) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends tumbler to dry and fluff, or shrink knitted fabrics after washing or dyeing:
Places material to be dried on table, and shakes items to remove wrinkles. Loads material into drum of machine. Turns rheostat to required temperature, and regulates timing dial to set length of drying cycle, according to type of material being dried. Presses button to start machine. Moves lever to reverse temperature of tumbler to cool materials and impart elasticity. Unloads machine at end of drying cycle. Separates material according to size, style, and colour.

8275-262 WEFT STRAIGHTENER(textile) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: S 4 7

Tends machine that straightens and aligns skewed weft of broad woven fabric, after wet-finishing:
Observes cloth as it passes under beam of light to detect skewed weft. Presses button or turns handwheel to control movement of rollers that hold back leading selvage of skewed cloth and to allow lagging selvage to catch up.
May tend finishing machine, such as cloth dryer, calender or tenter frame.

8275-266 WRINGER TENDER(leather tan. & fur dress; textile) DPT:685

squeezer operator; wringing-machine operator.

GED: 2 SVP: 2 EC: I 5 6 PA: M 4

Tends machine that removes moisture and wrinkles from felt sheets or hides:
Places material between rollers of machine, and pushes button to activate rollers that press moisture or smooth wrinkles from material. Moves lever or valve to regulate pressure on rollers according to thickness of material being pressed. Removes material from rollers, and places it on cart or feeds material to folding device.
May sew ends of pressed material together to form continuous length, using sewing machine. May untwist material to be pressed, using untwisting apparatus. May process particular section or type of leather and be designated accordingly; for example,
Belly Wringer
Blue-Leather Setter

8275-270 YARN DRIER(textile) DPT:685
dry-room man; skein-yarn drier.
 GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that dries skeins of yarn:
 Turns valves to set temperature of drying cabinet according to specifications. Starts fans to circulate heat in cabinet. Hangs skeins on rack and pushes rack into drying cabinet, or loops skeins over poles on conveyor that passes through cabinet. Removes dried skeins of yarn from racks or poles. Shakes tangled skeins of yarn before and after drying to straighten them. Loops dried skeins together and places them in boxes or on hand truck for transfer to next processing stage.

8275-274 YARN FINISHER(textile) DPT:685
 GED: 2 SVP: 2 EC: I 5 PA: M 3 4

Tends machine that applies finishing solution to yarn, thread or twine to strengthen it and impart lustre:
 Places full spools or bobbins on spindles of creel, draws thread through finishing compound and drying unit, and laps end onto take-up package. Pours finishing compound into tank to maintain specified level. Starts machine, and adjusts valve to maintain specified temperature in drying unit. Doffs full packages from machine, and replaces them with empty spools or bobbins.
 May tend machine that stretches materials in addition to finishing them. May tend machine that impregnates belt cord with rubber compound, prior to further processing. May tend machine that washes and dries twine.

**8275-299 OTHER TEXTILE FINISHING AND
 CALENDERING OCCUPATIONS**

This group includes textile finishers and calenderers, not elsewhere classified; for example, those who produce moire effect in fabric, and improve finish and wearing quality of cord. Typical examples of occupational titles covered by this residual group definition are:
 Cord-Finishing-Machine Tender(textile)
 Moire-Process-Machine Tender(textile)

8276-INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, TEXTILE PROCESSING

This unit group includes occupations in inspecting, testing, grading and sampling work as described under the term titles, 02-170 INSPECTOR (any ind.), 02-430 TESTER (any ind.), 02-150 GRADER (any ind.), and 02-330 SAMPLER (any ind.), concerned with quality-control activities in textile processing.

8276-110 TEXTILE TESTER(textile) DPT:384
laboratory tester; quality-control man.
 GED: 3 SVP: 6 EC: I PA: L 4 7

Conducts physical or chemical tests on textile materials and products at any stage in manufacturing process to verify their characteristics or composition and to determine conformance to standards, performing any combination of the following duties:
 Collects and labels samples from machinery throughout manufacturing process. Feeds yarn, roving or sliver into evenness tester to detect and record variations in weight. Determines tensile and tear strength of cloth, using breaking machine. Breaks skeins of yarn with break-tester to determine strength of yarn. Weighs fibre sample on balance scale, before and after drying, or tests raw stock with meter-equipped probe to determine moisture content. Computes twists per inch in yarn samples, using standard guides. Examines samples of fabrics, using microscope, magnifying glass and pick counter to identify types of fibres and number of threads per inch. Tests yarn and cloth samples for colour fastness, shrinkage and absorbency, using special testing devices, washers, heating and drying ovens and dehumidifier. Determines colour value of yarn or cloth by exposing samples to sunlight or ultra-violet light for specified time and comparing fading to standard samples. Verifies dye formulas used to develop new colours and to match existing colours. Tests oil and soap products to determine their fitness for use in cloth or yarn finishing processes. Verifies efficiency of scouring process, using scales, solvents and ovens to determine percentage of natural grease removed. Records results of tests,

compares them with company standards and reports variations. Records waste produced by processing departments.
 May specialize in testing a particular type of fabric or material and be designated accordingly; for example,
 Cloth Tester
 Dye Tester
 Scoured-Wool Tester
 Stretch Tester
 Yarn Tester

8276-114 SWATCH CHECKER(textile) DPT:267
 GED: 3 SVP: 6 EC: I 5 PA: L 4 5 7

Inspects loom and cloth swatches to detect cause of weaving defects:
 Examines loom to detect mistakes in set-up, such as defective drawing- in, filling and warp. Compares sample of first woven cloth with standard swatch, using pick counter and flashlight equipped with magnifying lens, to detect defects in style, yarn, weaving or colour. Requests dyer to dye swatch to ascertain dye retention of thread and detect weaving defects. Determines adjustments required to correct defectiveness and notifies repairman to set loom accordingly. Records number of swatches examined and nature of defects.
 May make adjustments to machine. May test warp tension with tensiometer. May boil swatch to remove size and permit examination of threads. May dye swatch.

8276-118 WOOL-FLEECE-SORTER-AND-GRADER(textile) DPT:387
 GED: 3 SVP: 6 EC: I 7 PA: L 3 4 7

Sorts and grades wool fleece according to standard specifications:
 Lifts unprocessed fleece to estimate its weight. Separates locks and shaffy portions of fleece, and examines fibres for length, strength, diameter, elasticity, colour, cleanliness and moisture to determine quality and approximate shrinkage. Grades and places fleece in containers or piles for weighing. Marks grade on container or load ticket, stating quality and disposal action.
 May direct warehousemen to pile fleece in appropriate grade storage. May specialize in sorting or grading wool fleece and be designated accordingly; for example,
 Wool-Fleece Grader
 Wool-Fleece Sorter

8276-122 CLOTH GRADER(textile) DPT:387
 GED: 3 SVP: 5 EC: I PA: M 4 7

Examines and grades cloth according to defects found:
 Examines cloth for defects marked in previous inspections, using examining frame, and determines whether corrections can be made to restore cloth to standard quality. Cuts defective sections from cloth with scissors, or routes cloth to appropriate department for reprocessing. Classifies cloth that cannot be restored to first- grade quality, according to standards for lower grades. Records disposition of cloth rehanded.
 May inform weaving department of repeated imperfections requiring loom adjustment. May examine and grade experimental fabrics and prepare reports accordingly.

8276-126 QUALITY-CONTROL TESTER(knit goods) DPT:584
 GED: 3 SVP: 4 EC: I PA: L 4 7

Tests hosiery to verify conformance to plant quality standards or to obtain data for use in establishing quality standards for new styles:
 Measures overall length of hose, length of toe, foot, heel, welt, and after welt, with scale. Determines stretch of welt, knee, ankle, and instep, using weighted stretch machine. Tests tensile strength of hose at knee, using stretch-flex machine. Ascertains number of stitches per inch, using stitch-counting machine. Examines samples of hose in production and defective hose returned by purchasers to find knitting, seaming, looping, or dyeing defects, using magnifying glass. Records results of findings.
 May determine cause of defect, basing judgement on knowledge of production methods, or send defective items to appropriate departments for analysis of defects.

8276-130 FABRIC INSPECTOR(textile) DPT:586
cloth examiner.
 GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Inspects finished or unfinished fabrics for weaving or finishing defects, using power-driven examining frame:
 Mounts roll of fabric on brackets, using hoist, and pulls fabric over rollers and down over inspection board. Wraps fabric end around take-up beam or feeds fabric end past take-back rollers and through folding device to collection truck. Sets yardage clock at zero and pushes lever or pedal to start fabric winding onto beam or folding into truck. Scans fabric as it passes over inspection board for defects, such as grease spots, slubs, mispicks, uneven selvages, and irregularities in colour. Marks defects with thread, chalk, or adhesive sticker. Measures width of fabric with tape to detect variation from standards. Records information, such as defects, fabric style, and yardage inspected.
 May repair defects, such as soils, slubs, or loose ends, using steel pick, scissors, knife, or cleaning solutions. May cut or tear strips from end of fabric for sample. May count number of picks per inch, using pick counter. May feel fabric to compare texture with sample. May examine fabric without the use of power equipment. May inspect a particular type of fabric or use a machine to assist in inspecting and be designated accordingly; for example,
 Grey-Goods Examiner
 Inspecting-Machine Tender

8276-134 PRE-SHRINKING PROCESS TESTER(textile) DPT:484
 GED: 3 SVP: 3 EC: I PA: L 4

Tests cloth sample to determine its potential shrinkage to establish pre-shrinking machine settings and to verify effectiveness of pre-shrinking process:
 Marks cloth sample at measured intervals, using template. Loads samples into washing drum and adds detergents. Starts machine that automatically washes and rinses samples. Removes samples from washing machine at end of cycle and loads them into centrifugal extractor that extracts excess water. Presses samples, using iron. Measures distance between markings on cloth, using yardstick, and computes average shrinkage of length and width. Converts amount of shrinkage into machine settings, using conversion tables. Records measurements, cloth lot, style number, and machine settings. Cuts samples from cloth after processing and tests cloth to verify that material meets shrinkage specifications.

8276-138 ROVING-WEIGHT GAUGER(textile) DPT:487
roving sizer.
 GED: 3 SVP: 3 EC: I 5 7 PA: L 4

Weights roving samples to detect variation in weight produced by tape condensers of wool-carding machines:
 Positions jackspool of roving in winding position and threads roving ends from spool through guides and takeup roller. Sets yardage counter at specified yardage and turns crank to wind sample of roving. Weighs sample on grain scales and records weight on chart. Plots weight of each end of roving produced by single carding machine on graph paper and compares with standard graph to isolate variations in roving. Notifies machine fixer of equipment malfunctions.
 May move weight on carding-machine-weight-control lever to alter weight of roving produced.

8276-142 WEAVING INSPECTOR(textile) DPT:584
inspector, loom.
 GED: 2 SVP: 4 EC: I 5 PA: L 4 7

Inspects cloth emerging from loom to detect weaving defects and other imperfections:
 Patrols work area and scans cloth on loom for defects, such as broken ends and slubs. Stops loom, ties length of yarn to broken warp yarn, and draws yarn through harness and reed, using reed hook. Picks out slubs and coarse yarn, using burling iron. Reweaves cloth, using needle. Marks grease spots and irreparable defects with crayon to indicate yardage allowance. Trims loose threads with scissors. Records defects on tag and attaches tag to finished roll.

8276-146 HOSIERY PAIRER(knit goods) DPT:587
pairer-inspector.
 GED: 2 SVP: 4 EC: I PA: L 4 7

Inspects, sorts and pairs finished hosiery articles according to grade, colour, size, and length:
 Piles and spreads hosiery articles on pairing table and examines them for defects, such as pulls, snags, holes, mends, and dye streaks. Positions graded articles over length-scale to measure overall length of toe, foot, heel, and welt. Selects pair of identical stockings of same grade, and stacks them on table, or spreads panty-hose or tights on pairing table. Examines them to ensure matching pairs. Groups pairs in lots by grade. Places defective articles into box for disposal or repair. Records inspection data.
 May stretch hose, using stretching machine, to measure its dimensions while extended.

8276-150 INSPECTOR, TEXTILE PRODUCTS(textile) DPT:587
 GED: 2 SVP: 4 EC: I PA: L 4 7

Examines finished articles, such as bedspreads, draperies and carpets to ensure that product meets company quality standards:
 Spreads article on table, rack or floor and inspects for dimensional accuracy, defective stitching, loose threads, colour variation between thread and fabric, uneven seams, corners, pleats and hems, and colour, design or size mismatches in paired items. Marks rejects with chalk or thread and places them on hand truck, rack or table for return to repair section or to operator who made article. Records number and type of defects. When inspecting tufted articles, scans article to detect uneven or ragged tufts.
 May fold or roll articles to company specifications. May work as member of team when examining large articles. May inspect particular type of article and be designated accordingly; for example,
 Bag Inspector
 Carpet Inspector

8276-154 WARP-TENSION TESTER(textile) DPT:687
tension tester.
 GED: 3 SVP: 3 EC: I 5 PA: L 4

Tests and adjusts tension of warp on looms to ensure proper weaving:
 Presses arm of tensiometer against a designated number of warp threads and reads gauge. Removes or adds weights, or turns adjustment nut with wrench to regulate tension, according to specifications. Tests accuracy of tensiometer and known weights and adjusts tensiometer, using screwdriver.
 May test and adjust tension of warp on other textile machines.

8276-158 INSPECTOR, TRIMMING MATERIAL(textile) DPT:586
 GED: 2 SVP: 3 EC: I PA: L 4 7

Inspects trimming material for defects:
 Places box of flat-folded trimming material, such as lace, ribbon, or tape seamed in parallel rows, at inspection end of table, and empties box on reciprocating rollers beneath take-off rollers. Threads trimming through feeder rollers, over inspection table, and through take-off rollers that guide trimming into box. Sets yardage meter, starts rollers, and inspects trimming for holes and defective stitching, as it passes over table. Cuts out defective trimming, using shears, and pulls out defective stitching. Sews cut ends of trimming to form continuous length, and repairs unravelled seams, using portable sewing machine. Cuts trimming as indicated by yardage meter, to form bundles of specified length, and ties bundles with string. Marks ticket to indicate yardage and type of trimming in bundle, and places bundle in storage area.

8276-162 KNITTED-FABRIC INSPECTOR(knit goods) DPT:587
 GED: 2 SVP: 3 EC: I PA: S 4 7

Inspects knitted fabric for defects, and rejects fabric not meeting specifications:
 Examines knitted fabric for flaws, such as defective knitting and loose threads. Measures fabric and sews thread marker into material to indicate required length. Folds and ties fabric that passes inspection,

and stacks it on hand cart. Records inspection information on routing paper and attaches paper to fabric.
May cut loose threads with scissors. May invert knitted tubing.

8276-166 STOCKING INSPECTOR(knit goods) DPT:587
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Inspects unfinished hose for defects and to ensure conformance with specifications:

Draws hose over inspection board and inspects hose for defects, such as holes, runs, torn threads, dropped stitches, and defective looping or seaming. Marks defects with chalk. Turns form to inspect both sides of hose. Clips loose threads from hose, using scissors or electric clippers equipped with suction attachment. Strips hose from board if board is not equipped with automatic turning and stripping device. Sorts hose according to type of imperfection, and places them in separate boxes. Records production data on ticket.
May bag first quality hose for dyeing.

8276-170 SAMPLE MAN(textile) DPT:687
sample maker.
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Prepares samples of cloth or yarn, performing any combination of the following duties:

Collects samples or selects cloth or yarn according to sample order and examines them for defects in weave, shade, finish and dimensions. Rejects imperfect cloth or yarn. Cuts samples to specified length with scissors. Folds samples of cloth according to specifications, stamps identification data on tag, and staples tag to samples. Unwinds yarn from cheese, hangs skeins of yarn onto inspection pin, removes kinks, cuts skein ends with scissors, and ties or braids skeins. Winds sample yarn on strips, mounts strips on cardboard display card, punches holes in card and inserts eyelets into holes with eyelet punch. Distributes sample cards according to distribution list.

May tend winding unit when inspecting long cloth samples. May weave cloth samples, following specifications and using hand loom, and be designated accordingly,
Sample Weaver

8276-174 SHADE MATCHER(textile) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Examines rolls or folded cuts of dyed or printed cloth for variations in colour, and sorts cloth accordingly:

Places swatches, cut from rolls or folded cloth, onto examining table. Grades swatches according to shade standards. Compares swatches from opposite ends of cloth piece to detect variation of colour within the piece. Writes grade numbers on swatches and attaches them to corresponding lot. Stacks rolls or folded cuts of cloth onto hand truck ready for packing.

8276-178 SKEIN-YARN EXAMINER(textile) DPT:687
skein inspector.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Examines skeins of yarn to detect flaws, such as breaks, soil, slubs and uneven dyeing or twisting:

Shakes skein to straighten minor tangles in yarn, hangs skein over rod at eye level, and manually spreads out and pulls yarn in skein to locate imperfections. Cuts out slubs and ties yarn ends together to form continuous strand. Observes winding and tying of yarn to ensure that skein has been made according to specifications. Weighs skein from each lot, and records weight, number and type of flaws found. Knots hank of yarn around several skeins to form bundle and packs bundles into boxes for shipment, or dumps bundles into cart for further processing. Washes yarn, using cleaning solution or soap, to remove soil.

8276-182 YARN INSPECTOR(syn. fibres; textile) DPT:687
yarn examiner.
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Inspects yarn for defects preparatory to shipment, storage, or further processing:

Examines bobbins, cones, cheeses or tubes of yarn by sight and touch for defects, such as broken threads, cross threads, dirty yarn and

excessively loose or tight winding. Places defective yarn on trays, bobbin carts, or in boxes for reprocessing.

May package yarn in polyethylene, using wrapping machine. May perform routine tests on yarn to determine breaking strength and weight. May transport yarn to storage or subsequent processing stage, using hand truck.

8276-186 CLOTH SORTER(textile) DPT:587
rag-table sorter; remnant classifier.
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Sorts cloth by style, colour, length, weight or weave for further processing or packaging, performing any combination of the following duties:

Sorts cloth remnants according to quality, as specified on label. Spreads bundle of folded cloth on table, and counts number of folds. Assigns grade to cloth according to number of weave or colour defects. Writes style number, grade and yardage on label and glues label on cloth. Winds cloth onto corrugated board, using folding frame and winding unit. Separates knit tubing on conveyor, according to colour, and places tubing on trucks. Weighs cloth or waste cartons on floor scale. Stores cloth or conveys it to various processing departments, using hand truck.

8276-190 GREIGE-CLOTH EXAMINER(textile) DPT:686
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Inspects greige corduroy or velvet cloth to detect filling floats, and cuts floats with pickup knife:

Positions truck of cloth at feed end of examining frame, and pins end of cloth to cloth in machine. Pushes button and depresses pedal to start machine that passes cloth over inspection board and scans cloth for uncut floats. Stops machine, inserts point of pickup knife under floats and cuts threads. Doffs cloth from swing-folding attachment onto hand truck, and writes yardage of cloth inspected on order ticket. May mask defective parts, using coloured thread and needle.

8276-194 NARROW-FABRICS EXAMINER(textile) DPT:687
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Inspects narrow fabrics for defects:

Examines rolls of narrow woven fabrics, such as bandage and tape, to detect defective weaving, colour variations, damage or soiling. Cuts out defective sections, using hand shears. Returns defective rolls for re-examination and re-rolling. Splices cut ends with adhesive tape. Measures width of fabric with ruler to determine conformance with standards.

May place finished rolls into plastic bags, and pack them in cardboard boxes for storage or shipping.

**8276-299 OTHER INSPECTING, TESTING, GRADING
AND SAMPLING OCCUPATIONS, TEXTILE
PROCESSING**

This group includes textile processing inspectors, testers, graders and samplers, not elsewhere classified; for example, those who measure fabric pieces, feel thickness of fabric to estimate weight and sort pieces according to size and weight, and test hard-felt sheets for uniformity of thickness, using testing machine. Typical examples of occupational titles covered by this residual group definition are:

Sorter(textile)

Testing-Machine Operator(textile)

**8278-OCCUPATIONS IN LABOURING AND OTHER
ELEMENTAL WORK, TEXTILE PROCESSING**

This unit group includes occupations in labouring or other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with processing textile fibres into yarn or thread, and weaving, knitting and finishing fabrics.

8278-110 CLOTH FEEDER(knit goods; textile) DPT:686
GED: 1 SVP: 2 EC: 1 5 PA: M 4

Feeds machines that dye, finish, wash, treat, dry or otherwise process cloth:

Aligns trucks or rolls of cloth to be processed through machine according to priority or style, and width. Positions truck of cloth, or mounts roll of cloth on brackets at feed end of machine. Sews end of cloth to lead cloth, using portable sewing machine. Straightens cloth by hand as it enters machine.

May assist machine operator to thread cloth through machine. May offbear cloth from machine. May be concerned with a particular process and be designated accordingly; for example, Calender Helper(textile)

8278-114 CLOTH TURNER(knit goods) DPT:686
roll turner.
GED: 1 SVP: 2 EC: 1 PA: M 4

Turns tubular knitted cloth right side out and winds cloth onto rolls or into hand truck by one of the following methods:

1. Pulls end of cloth through turning pipe (slotted metal form). Opens and pulls end of cloth back over turning pipe and circular spreader. Inserts turned end under feed rollers and laps end around take-up roller. Shifts lever to activate feed and winding rollers. 2. Positions loaded hand truck at feed end of machine and empty hand truck at output end. Pulls cloth over end of turning tube. Positions feed roller against cloth and starts roller rotating to force cloth onto tube. Knots end of cloth to lead cloth in tube. Starts rollers that pull cloth inside tube to turn cloth right side out.

8278-118 DYE-HOUSE HELPER(knit goods; textile) DPT:686
GED: 1 SVP: 2 EC: 1 4 5 PA: M 4

Assists dyer to dye, bleach, or wash textile materials; such as, fibres, yarn, fabric, or garments, performing any combination of the following duties:

Carries chemicals, such as dyes, bleaches and scouring agents from mixing area to dye house. Mounts cloth rolls on brackets at feed end of machine, using hoist. Feeds end of cloth through folding attachment of machine that unwinds cloth into hand truck. Stacks yarn packages on spindles of dye stand preparatory to dyeing or bleaching. Lifts dye stands or beams into machine, using hoist. Loads fibrous materials into dye machine, manually. Closes and secures machine lid, using hand tools. Removes dyed or bleached materials from machine by hand or using hoist. Pushes empty or loaded trucks to and from other processing areas. Cleans dyeing machines, using water hose, rags and chemicals. See also definition for term title, 02-160 HELPER (any ind.).

May assist specific dye operator or perform particular task and be designated accordingly; for example, Bleacher Helper
Doffer, Dyehouse
Dye-Reel-Operator Helper

8278-122 LABOURER, WOOLLEN MILL(textile) DPT:686
utility man, woollen mill.
GED: 1 SVP: 2 EC: 1 4 5 PA: H 4

Performs any combination of following duties in carding, spinning, weaving, dyeing and finishing departments of woollen mill:

Changes empty or full spools of roving on carding, creeling or spinning machines. Cuts and removes tacking stitch that secures top and bottom layers of folded cloth, using scissors. Threads or laps cloth between or over rolls of processing equipment, such as washers, dryers and dye vats. Transports wool, yarn or cloth between operations and departments, using hand truck or hoist. Weighs material to obtain quantities processed or delivered to machines or storage bins. Feeds raw wool into carding machine. Cleans machines and floor area, using air and vacuum hose, broom and rags.

8278-126 ROLL-MAT-MACHINE FEEDER(textile) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Feeds baked fibre glass sliver into machine that produces roll mat: Stacks tubes of sliver adjacent to feed end of machine to ensure continuous supply of sliver is available. Removes cardboard tube from package of sliver and locates inner end of strand. Unravels portion of sliver to verify location of end and cuts ravelled sliver with knife.

Positions coreless package in machine creel, and threads material end through guides and rollers into choppers of machine and starts machine. Observes operation of machine to detect strand breakage. Stops machine to tie broken ends and replenish machine creel, as required.

8278-130 TRAY DRIER(knit goods) DPT:686
GED: 1 SVP: 2 EC: 1 PA: M 4

Feeds machine that dries preboarded and dyed hose in perforated trays:

Removes folded hose from dye bag or dumps them on table and smooths or shakes out wrinkles. Places hose evenly into tray of drying machine and pushes filled tray into drying cabinet. Turns knobs to set temperature, humidity and drying cycle and presses button to start machine. Pulls tray from cabinet after hose has been dried. Removes and stacks hose in boxes, for pairing.

8278-134 UTILITY MAN, FELT GOODS(textile) DPT:686
GED: 1 SVP: 2 EC: 1 5 7 PA: M 4

Performs any combination of following duties in machine manufacturing of felt goods:

Cuts felt from feed rolls, with hand shears, and manually removes rolls of processed material from machine. Marks length of finished felt on tag attached to roll. Lifts and positions rolls of base material and bats into feed holders of machine. Transfers materials from discharge end of one machine to feed end of next, using hand truck or dolly. Picks up scraps of material from around machine and places into bins, hoppers or boxes. Lifts felt rolls from conveyors and stacks and bundles finished rolls for further processing, storage or shipping. May weigh and record weight of felt bundles to maintain production records. May assist operators in setting up machines.

8278-138 WASTE-MACHINE FEEDER(textile) DPT:686
GED: 1 SVP: 2 EC: 1 6 PA: M 3 4

Feeds machine that vacuums foreign matter from cloth and chops cloth into shredded stranded form:

Loads bale of cloth into feeding position and places end of cloth, or handfuls of loose cloth, on conveyor that conveys material to vacuum device and cutting blades. Removes material from delivery end of machine and ties material into bundles, using twine and scissors. Loads bundles in container, for removal.

May offbear and feed waste material, such as cotton strands, jute sacks and rejected felt underlay into other processing machines. May detect and remove foreign matter, such as metal and glass, from waste.

8278-142 YARN SALVAGER(textile) DPT:686
GED: 1 SVP: 2 EC: 1 5 PA: M 4 7

Salvages packages of wound yarn, examining yarn for surface defects and removing portions of defective yarn:

Examines bobbins or cheeses for defects, such as cuts, faulty winding or soiled yarn. Pulls yarn from package, manually. Places yarn on holder and draws yarn end over revolving reel or take-up roll. Presses button to start reel that unwinds yarn from bobbins or cheeses and observes yarn to determine when defective portion is removed. Cuts yarn from reel, using knife, segregates removed yarn into bags, according to type and identifies bags. Rewinds salvaged yarn on cheeses or bobbins, manually or using winding machine. May unwind defective yarn, manually.

8278-146 YARN STRIPPER(textile) DPT:686
stripper.
GED: 1 SVP: 2 EC: 1 5 PA: L 4

Strips unused yarn from supply packages; such as, bobbins, cones, quills, cops, or spools by one of the following methods:

1. Dumps hand truck or other container of depleted supply packages into hopper of machine that strips remaining yarn from package with knives, brushes, and compressed air. Pushes or pulls packages by hand or with rake to regulate flow from hopper onto feed conveyor. 2. Dumps supply packages into tumblers that remove yarn by agitation. Places unused yarn in containers for reprocessing. May remove remaining yarn or roving from spent supply packages by hand, with knife, or using sandpaper. May strip specific type of yarn package and use particular stripping method and be designated accordingly; for example,

Quill Stripper
Spool Cleaner, Hand

8278-150 BOBBIN PROCESSOR(syn. fibres; textile) DPT:687
bobbinsorter.
GED: 1 SVP: 2 EC: I PA: M 4

Examines, strips, polishes and sorts bobbins or spools before putting them back in service:

Collects bobbins which require processing from designated areas, using hand truck. Strips waste yarn from bobbins by hand or using knife. Removes obsolete markings and polishes bobbins with sandpaper, emery cloth, and steel wool. Inspects bobbins for defects and discards defective ones. Paints identification marks on bobbins as instructed and sorts them into designated containers. Returns processed bobbins to winding area in boxes or hand truck. Loads waste yarn stripped from bobbins, into hand truck, for further processing.

8278-154 CLOTH FRAMER(textile) DPT:687
GED: 1 SVP: 2 EC: I PA: L 4

Winds pile fabric onto frames to prevent crushing of pile:

Places metal frame on winding bracket of worktable, manually. Turns frame by hand and catches cloth selvages on hooks of frame, spacing cloth around frame in layers. Positions and bolts precut wooden slats to outside of frame, using wrench. Ties identification label to selvage, using cord and hook.

May place frame of cloth in box and move box to storage area, using hand truck.

8278-158 CREELER(textile) DPT:687
warper-creeler.
GED: 1 SVP: 2 EC: I 5 7 PA: M 3 4 7

Creels weaving, twisting, warping, tufting, or other textile machines to change style of yarn or to replace exhausted yarn packages:

Sorts and places yarn packages on spindle of creel and threads yarn through guides or ties yarn to ends of yarn from preceding package. Removes old yarn from machines before changing to different size or type of yarn. Repairs yarn breaks in creel by tying loose ends. Replaces yarn packages or spools in creel when faulty yarn is detected. Cleans dust and lint from creel, using brush or air hose. Transports yarn packages from storage area to creels, using hand truck.

8278-162 PICK REMOVER(textile) DPT:687
GED: 1 SVP: 2 EC: I PA: M 4

Removes false selvages and filling floats from looped pile fabric:

Lifts roll of cloth onto bracket at end of table and unrolls cloth onto table. Trims false selvage from edge of cloth, using scissors. Secures trimmed edge of cloth on pins set along edge of table and pulls false selvage on opposite edge of cloth to remove selvage and floats. Folds and piles trimmed cloth on hand truck for removal.

May examine cloth while unrolling it on table to detect defects, such as, mispicks, broken warp or smears. May write grade, shade and quality on ticket and tie ticket to cloth, using hook.

8278-166 RAG-SORTER-AND-CUTTER(textile) DPT:687
GED: 1 SVP: 2 EC: I PA: L 4

Sorts and cuts reclaimable textile stock, according to fabric and colour: Transports reclaimable material from bin to trimming machine and turns on rotating blade. Scans wool rags for hardware, such as buttons and snaps, and holds rags against rotating blade that cuts hardware from rags and cuts rags into specified size. Sorts rags into bins, according to colour and fabric.

8278-170 SKEINER, HAND(textile) DPT:687
yarn linker.
GED: 1 SVP: 2 EC: I PA: M 4

Prepares yarn for bleaching, dyeing, scouring or finishing in skein form, performing any combination of the following duties:

Transports bundles of skeins from supply truck. Loosens and separates skeins, shakes out tangles in each skein and loops skeins together with cotton band to form continuous chain. Pulls end of chain through guide over reel on which skein is wound. Unties continuous skeins after processing and ties string around skeins to form larger

bundles. Hangs bundles on peg. Twists yarn ends to form roll and stacks rolled skeins on table for further processing.

May perform duties of one part of the process and be designated accordingly; for example,

Chainer
Puller
Roller-Up

8278-174 TEXTILE-MACHINE CLEANER(textile) DPT:687
GED: 1 SVP: 2 EC: I 4 5 PA: M 3 4

Cleans textile processing machine and equipment, performing any combination of the following duties:

Removes dust, dirt, gum, grease and lint from machines and auxiliary equipment, such as carding machines, winding frames, looms, harnesses, reeds and drop wires, using solvents, rags, compressed air, brushes and scraping tools. Removes machine guards and accessories, using hand tools. Scrubs harnesses in cleaning solution and hangs them in drying cabinet. Adds or removes drop wires in assembly, according to specifications. Oils moving parts and wearing surfaces, using oil gun. Cleans floor around machines, using broom and vacuum cleaner. Removes waste and dirt from working area, for disposal.

May clean a particular machine or processing equipment and be designated accordingly; for example,

Carding-Machine Cleaner
Harness Cleaner
Loom Cleaner
Winding-Frame Cleaner

8278-178 TRAVELLER CHANGER(textile) DPT:687
GED: 1 SVP: 2 EC: I 3 5 7 PA: L 4 7

Changes travellers on ring-spinning frames:

Replaces worn travellers and changes travellers for different style or size of yarn being processed, using fingers or hook. Threads yarn through traveller and restarts machine. Cleans spinning frame to remove lint and roving waste, using hook and brush.

May replace worn and broken rubber drive bands.

8278-182 CLIPPER, MACHINE(knit goods) DPT:686
GED: 1 SVP: 1 EC: I 5 PA: L 4

Feeds automatic machine that clips threads and turns and strips hose from form:

Places full box of assembled hose at feed end of machine, manually. Pulls hose over form that carries hose through machine to clip threads, turn and strip hose.

May strip hose from forms of machine that is not equipped with turning and stripping device. May detach tally coupon from completed lot for production record.

8278-186 CAN DOFFER(textile) DPT:886
GED: 1 SVP: 1 EC: I 5 7 PA: M 3 4

Doffs and transfers sliver cans among carding, drawing and slubbing machines:

Places full sliver cans on hand truck and pushes truck from carding to drawing and slubbing machines to maintain work flow. Removes empty cans from drawing and slubbing machines and returns them to carding machines. Sweeps work area and places clean waste sliver in machine feeder for reprocessing.

8278-190 KAPOK BLOWER(textile) DPT:886
GED: 1 SVP: 1 EC: I 5 PA: H 4

Feeds machines that automatically clean, dry, expand and aerate kapok fibres for use as pillow, cushion and quilt filler:

Removes wire and burlap from bales of kapok, using cutters and pushes material into hopper of machine. Fastens cloth bag to machine outlet pipe to recover blown material. Opens air duct or presses switch to blow material through machine and into bag. Removes bag from outlet pipe, ties and transports it to storage area.

8278-194 SHUTTLE FILLER(textile) DPT:886
 battery loader.
 GED: 1 SVP: 1 EC: 1 5 PA: M 4 7

Feeds series of loom magazines with shuttles:
 Inserts quill into shuttle and threads yarn end through each shuttle eye, using hook. Loads threaded shuttles into loom magazine and pulls out yarn end into yarn holder, ready to be drawn through warp.
 May place shuttles on loom table, ready to be used for weaving.

8278-198 ROLLER CLEANER(textile) DPT:887
 GED: 1 SVP: 1 EC: 1 5 7 PA: L 4

Cleans lint and dust from rollers of spinning or roving frames while machines are in operation:
 Removes roving wound on spinning or roving frame rollers with fingers, hook or pneumatic roll-picker, and places lint into bag, for removal. Brushes lint and dust from ring rails, tapes and pulleys.
 May clean under machine, using air hose. May oil machine parts.

**8278-299 MISCELLANEOUS OCCUPATIONS IN
 LABOURING AND OTHER ELEMENTAL
 WORK, TEXTILE PROCESSING**

This group includes textile processing labourers and elemental workers, not elsewhere classified; for example, those who separate bundles of hemp or sisal fibre, offbear felt-base rugs and floor coverings from lowering machine, remove short lengths of fibre glass and find end of continuous strand, place cardboard core at end of length of knitted cloth, mix cotton and wool waste, wind skeins of thread used to test effect of dyes, stack knitted garments between alternate layers of hydraulic press boards, cover winding frame coil springs with stockinets, salvage sacks and bagging used as covering for raw stock fibres; collect, sort and wind end cloths onto cardboard, and feed machine that unwinds worsted tops into mesh bags. Typical examples of occupational titles covered by this residual group definition are:
 Bagging Salvager(textile)
 End Finder, Twisting(syn. fibres)
 Spring-Tube Coverer(textile)

8279-TEXTILE PROCESSING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with operating, tending and feeding textile processing machines to produce padding, punched felt, tufted carpeting, bonded fabrics, tassels, fringes and extruded synthetic fibres; cementing flock to cloth; brushing cloth to remove foreign matter; shaving protruding fibres from twine; folding cloth; measuring cloth; compressing felt; sorting and storing yarn; and offbearing cloth from machines.

8279-110 PADDING-MACHINE OPERATOR(textile) DPT:582
 GED: 3 SVP: 5 EC: 1 5 6 PA: M 3 4 7

Operates battery of machines to produce padding from batting:
 Tightens nuts on lock plate, loom beam and web plates to align base plate and set machine stroke, using wrenches. Places rolls of batting and burlap base in feed holders, and aligns and threads ends of material through machine. Turns handwheels to adjust heat of calendar rolls to position knives that trim felt, and threads needles of stitching-machine that binds batting to base to form padding. Adjusts screws to set limit of traversing-spray gun that sprays binder onto surface of padding, and turns air valve to regulate spray of binder. Presses switch to start machine and monitors operation of machine from central-control panel. Replaces needle frame in machine after fitting new needle. Replaces spent rolls of batting or burlap base by sewing leading end of new roll to trailing end of old roll. Replaces worn or broken machine parts, using hand tools. Maintains operating log and records details of breakdowns.
 May control automatic mechanism that cuts padding to specified length, drops on layers of gauge, and cuts and laps gauge over pads. May place rolls of narrow reinforcing batting in holder, and guide batting under needles.

8279-114 FELT-MAKING-MACHINE OPERATOR(textile) DPT:682
 GED: 3 SVP: 5 EC: 1 5 PA: L 2 3 4 7

Operates felt-making and cutting machines to produce punched-felt products:
 Turns screws to adjust comb and stripper rolls of garnetting machine to produce specified bat. Installs needle board into needle loom to punch together loose bat into felt. Turns handwheels to adjust tension between steam heated calender rolls and to lower circular cutting knives, to compact felt, and trim felt to specified width. Fills sizing tank, positions automatic spray gun and turns air valve to spray size onto felt. Turns knobs to regulate temperature and air flow of drying oven. Mounts cutting dies in ram and bed of automatic die-cutting machine to cut felt into specified shapes. Turns knob to synchronize speed of machines and conveyors, and aligns feed guides. Starts machine and observes operations to detect malfunctions, and examines product to determine conformity to specifications. Sharpens dull circular knives with hone.
 May repair needle boards and assist in repairing equipment.

8279-118 TUFTING-MACHINE OPERATOR(textile) DPT:582
 GED: 3 SVP: 4 EC: 1 5 PA: L 4 7

Operates machine to produce rolls of tufted carpeting:
 Mounts roll of jute backing on machine, using power hoist, threads end of jute roll through guides and sews running end to end in machine, using needle and string. Draws yarn from feed tube through guides and needle eyes with threading hook. Starts tufting machine and observes operations, to detect machine malfunction, such as yarn breakage. Ties and mends broken ends of yarn, using latex and threading hook. Records information, such as yarn, style, number of stops, weight of waste and unused yarn. Cleans and washes machine, using air hose and rag.
 May transport yarn, rolls of jute backing, and finished carpeting with fork-lift truck.

8279-122 FIBRE-EXTRUDING-MACHINE TENDER(syn. fibres) DPT:685
 GED: 3 SVP: 4 EC: 1 5 PA: L 4 7

Tends machine and associate equipment that extrudes continuous synthetic-fibre filaments, performing any combination of the following duties:
 Moves controls to start machine and heat melting pot to extrude synthetic filaments. Grasps emerging filaments, combines filament ends to form single strand and passes strand through guides and over lubricating wheels. Attaches strand to take-up bobbins, using threading device, or leads strand into cans or through machine for further processing. Patrols area and observes operation to detect and correct operating irregularities, such as broken strands, plugged jets and misaligned guides. Examines lustre of filaments to detect deviations from specifications.
 May load polymer flakes or powder into machine feed hopper. May inspect and test fibre samples, using microscope, gauges and electronic testing equipment.

8279-126 CLOTH-PROCESSING-RANGE TENDER(textile) DPT:685
 GED: 2 SVP: 4 EC: 1 4 PA: M 4 7

Tends intermediate units of cloth bleaching, de-sizing, dyeing or finishing ranges, such as wash boxes, tender frames, drying cans, and curing ovens, working as member of team:
 Turns valves to admit steam, water and chemicals to washboxes and chemical troughs. Turns knobs to adjust temperature in drying and curing units and to regulate speed of motor-driven rollers. Patrols area between entry and terminal units to detect faulty operation of equipment. Reports grease spots, holes, and tears in cloth to range operator. Disentangles tear-outs, re-threads unit and sews torn cloth, using portable sewing machine to restore continuous process.
 May mix chemicals or dyes. May test strength of chemical solutions, using titrating equipment or hydrometer. May tend a particular type of range and be designated accordingly; for example,
 Cloth-Bleaching-Range Tender
 Cloth-Dyeing-Range Middleman

8279-130 YARN STOREKEEPER(textile) DPT:487
yarn sorter.
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Sorts yarn according to type, size, weight, colour, blend and quality for storage or distribution to other departments:

Receives and sorts boxes of processed yarn from spinning department. Places yarn in racks and bins. Selects yarn for weaving according to colour, quality and quantity specified. Selects yarn for dyeing, using colour sample of dyed yarn. Delivers yarn to weaving and dyeing departments, using hand truck. Sorts and weighs surplus yarn from weaving area, and returns it to storage. Maintains records of yarn received, sorted, stored and issued.

8279-132 GLASS-FIBRE-BONDING-MACHINE
TENDER(syn. fibres) DPT:585
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends machine that bonds several strands of glass fibre yarn into single strand:

Places bobbins on creel of machine, threads yarn through guides, over and under tension bars, through strip heater, building-agent reservoir, dies and cooling tank, and laps end of cord around take-up tube of winding machine. Turns valve to admit bonding material into reservoir, starts machine and observes covering and winding process to detect defects, such as broken ends. Ties broken ends together manually. Observes temperature gauge on control panel and adjusts thermostat to maintain specified temperature. Doffs tubes of bonded yarn from creel. Weighs tubes of bonded yarn, packs tubes in shipping containers and records weight on containers.

8279-134 BONDING-MACHINE TENDER(textile) DPT:685
combining-machine tender.
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends machine that bonds together two layers of cloth or layer of cloth and another material, such as felt or foam rubber by application of glue, heat and pressure:

Mounts rolls of materials in brackets at feed end of machine. Threads materials through guides and rollers and ensures that reservoir is filled with specified glue. Regulates thermostat of drying cylinders. Presses button to start machine, and observes operations to detect malfunctions. Verifies finished fabric at delivery end by fingering fabric to ensure layers are firmly bonded.

8279-138 FELTING-MACHINE TENDER(textile) DPT:685
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends felting machine that compresses several layers of felt into one layer by application of heat and pressure:

Suspends bats of felt manually over conveyor belt. Unrolls felt strips onto conveyor and starts conveyor. Opens steam valves or water sprays to moisten felt passing through steam chamber or beneath sprays. Stops conveyor when bed of hydraulic press is covered by felt strips, and opens valves to heat press bed. Starts oscillating hydraulic ram that compresses felt. Laps end of felt bat to ends of other bats to form continuous strip. Spreads loose felt over thin spots to produce uniform product. Removes wrinkles by straightening layers of stock on press bed.

May pluck foreign matter from felt surface, using tweezers. May tend machine that attaches reinforcing burlap to felt strips.

8279-142 FLOCKING-MACHINE TENDER(textile) DPT:685
chenille tender.
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends machine that cements flock to cloth:

Positions roll of cloth on machine brackets and threads end of cloth through feed, sizing, and heated-drying rollers. Dumps flocking fabric into hopper of machine that chops fabric into flock, or dumps flock into blower that blows flock onto fabric. Pours sizing into trough through which sizing roller revolves. Starts machine and observes sizing, flocking and drying operations to ensure compliance with product specifications. Feeds flocked fabric through machine equipped with brush rollers to remove excess flocking.

8279-146 PAD-EXTRACTOR TENDER(knit goods; textile) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tends machine that extracts water or chemicals from tubular cloth, and treats cloth with softening solution:

Positions container of cloth on turntable of machines. Adjusts width of spreader to specifications by turning thumb-screws or by inserting wire loop and spacing bar of correct width. Threads cloth through tension rollers and ground spreader. Ties end of cloth to lead rope of squeeze roller or sews together with sewing machine. Pushes button, or turns handwheel to regulate pressure on squeeze rollers. Turns valve to feed softening solution into trough of machine. Starts machine and observes operation to detect misfeeding, twists in cloth and changes in size of material fed to machine. Untwists cloth by revolving turntable from which cloth is fed. Doffs cloth, places cloth on cart and pushes cart to specified area, for further processing.

May mix softening solution in feed tank, according to formula. May tend machine that dries padded fabric. May clean and lubricate machine.

8279-150 PRESSER-AND-THREADER(textile) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Tends hydraulic press, steam oven, blower and threading machine to prepare bobbins of yarn for further use:

Loads yarn-filled bobbins onto cage posts, fastens cover in place and positions loaded cage on hydraulic press bed. Pulls lever that lowers ram to compress thread and straighten bobbins. Tightens cover nut before releasing pressure to prevent expansion. Sets temperature and time controls on oven, and places loaded cage in steam oven to shrink thread and to temper bobbin metal. Removes cage from oven and cools with blower. Places bobbins and carriages in automatic threading machine. Loops bobbin threads over hooked needle, draws thread through carriage eye and pushes lever to start threading into carriage. Observes threading and rejects badly threaded bobbins and carriage. Sorts carriages according to spring strength to ensure required placement in machine.

May perform specific duty and be designated accordingly; for example,
Bobbin Presser
Carriage Threader

8279-154 BATTING-MACHINE TENDER(textile) DPT:585
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends machine that converts loose textile fibres into batting:

Moves lever to control automatic feeding of fibres by conveyor belt, or feeds armfuls of fibres into machine hopper. Starts machine and observes operations to detect malfunctions. Lifts roll of finished batting from machine and starts new roll winding into take-up beam. Weighs and records weight of standard-size sample from each roll. Controls amount of fibre fed into machine and weight of batting produced, by manipulating lever.

May cut batting into specified lengths, using scissors. May cut and wrap bundles of batting. May complete batch tickets and production records.

8279-158 CLOTH-MEASURING-MACHINE TENDER(textile) DPT:585
GED: 2 SVP: 2 EC: 1 PA: H 4 7

Tends machine that measures cloth before or after dyeing and finishing:

Mounts roll of cloth on machine, manually, and threads cloth through feed rollers. Laps end around take-up roller or sews end to leader cloth with portable sewing-machine. Turns knob to set yardage meter at zero. Presses button or pedal to start machine, and manually straightens cloth that becomes twisted as it enters machine. Stops machine and records yardage as indicated on meter. Compares meter reading with yardage on production ticket and records difference.

8279-162 FOLDING-MACHINE TENDER(textile) DPT:585
cloth folder, machine.
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Tends machine that folds cloth into uniform lengths preparatory to inspecting, wrapping or packing:

Mounts roll of cloth onto machine brackets, and threads cloth through

feed rollers, over and under tension rollers, and through slot of folding bar. Inserts end of cloth under clamps on machine table and sets yardage meter at zero. Starts machine and observes folding to detect seams in cloth. Stops machine and ravel seams with fingers. Depresses pedal to raise clamps, releasing cut of cloth, and removes cloth from machine. Records yardage on production ticket and attaches ticket, to cloth.

May count folds to determine yardage in each cut of cloth. May examine cloth for defects, such as grease spots, slubs, and knots, and rectify defects, using cleaning fluids, hooks and scissors. May weigh cloth and record weights. May fold particular type of material and be designated accordingly,
Felt Folder

8279-166 TAPE-FOLDING-MACHINE TENDER(textile) DPT:585

bias-pressing operator.

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that folds and creases bias-binding tape:
Selects folding guides according to widths of tape, and fastens guides on machine, using screwdriver. Threads tape through folding guides and pressing rolls and onto take-up roll. Turns valve to heat rolls and sets yardage meter. Starts machine and observes folding and creasing operations to detect machine malfunctions. Removes rolls from take-up bar, and wraps them with brown paper for storage. Keeps record of shade, width and yardage of tape processed.

8279-170 TUBING FOLDER(knit goods) DPT:585
layer-up.

GED: 2 SVP: 2 EC: 1 PA: M 4 7

Tends machine that smooths and folds knitted tubing, for further processing:

Positions roll of tubing on spindle of machine. Threads end of tubing over supporting rollers of machine, through steam-chamber and through feed rolls which pull tubing over spreader. Adjusts spreader according to size of knitted tubing. Turns valve to admit steam to steam-chamber. Adjusts folding arm according to size of folds required. Starts machine and observes tubing as it travels through rollers which move back and forth on carriage and deposit tubing in folds on table. Removes folded tubing from table and places it in boxes. Weighs tubing and records weight on work order.

8279-174 CLOTH FOLDER, HAND(garment & fabric; textile) DPT:587

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Folds cloth such as finished sheets, pillow-cases or drapery panels, preparatory to packaging:

Spreads finished cloth over table and checks cloth for defects, such as faulty stitching, dyeing, printing or finishing. Folds cloth in halves, aligns edges and matches pattern of fabric. Laps cloth at specified intervals to fold into pile. Records lot number and disposition of goods folded, on production sheet.

May work as member of team to fold large woven goods.

8279-178 PICK-PULLING-MACHINE TENDER(textile) DPT:685

waste-filling-float-remover.

GED: 2 SVP: 2 EC: 1 PA: M 4 7

Tends machine that pulls false selvages and waste filling-floats from looped pile fabric:

Lifts roll of cloth into feeding position, and pins or sews end of cloth to leader cloth. Positions false selvage between feed rollers on each side of machine. Starts machine and observes flow of cloth to detect oblique twist due to unequal tension on cloth. Depresses button to release tension on leading selvage and to allow lagging selvage to catch up. Doffs rolls of cloth and full boxes of filling waste.

8279-182 BALL-FRINGE-MACHINE TENDER(textile) DPT:685

ball-fringe maker.

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that automatically forms ball fringe from yarn end and secures fringe to tape:

Inserts woven tape through machine feeding mechanisms, positions yarn cones on spindles and threads yarn ends through tension guide. Presses button to start machine that automatically cuts bunch of yarn ends, ties them with wire to loops woven in tape and winds completed material on spools. Doffs full spools and places spools in cartons.

8279-186 BRUSH-MACHINE TENDER(textile) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: M 4

Tends machine that brushes foreign matter, such as lint, strings and loose fibres from cloth:

Transports cloth to machine with hand truck and pins or sews end of cloth to lead cloth. Turns screws to adjust cloth tension and pressure of brushes. Starts machine and observes operation to detect incomplete cleaning or machine malfunction. Cleans and oils machine.

May tend brushing machine equipped with steaming or watering attachment to set cloth nap.

8279-190 CLIPPING-MACHINE TENDER(textile) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that smooths twine by shaving off protruding fibre ends:

Adjusts blades of machine to remove protruding fibres, without reducing diameter of twine, using hand tools. Places ball of twine on feed spindle, threads twine through clipping machine and secures end on winding mechanism. Starts machines and observes clipping and winding operation to detect malfunctions. Doffs ball of clipped twine from winding spindle.

8279-194 FELT-PRESS-MACHINE TENDER(textile) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends press to make felt pads of uniform thickness by one or more of the following methods:

1. Positions flat steel spacing bars of required thickness on edges of hydraulic press to limit stroke of ram. Places felt pads between spacing bars and starts ram to compress felt. Opens steam valve to heat ram to facilitate compression of felt. Removes compressed pads and places them on conveyor. 2. Places felt pads between rollers of rotary press, and depresses pedal to bring rollers together to compress pads to specified thickness.

May pack pads in boxes.

8279-198 SAMPLE STEAMER(textile) DPT:685

patch washer.

GED: 2 SVP: 2 EC: 1 4 PA: L 4 7

Tends equipment that develops colour in sample swatches of printed cloth:

Places sample in miniature steam cabinet, and turns valves to spray chemicals and steam into cabinet for specified period. Removes sample swatch from cabinet, and washes swatch by hand to remove excess colour and chemicals. Rinses sample in chemical bath to fix colour. Squeezes excess water from sample, using wringer, and dries sample in oven or over heated drum. Routes sample swatch to interested personnel for comparison with standards.

8279-202 SCUTCHER TENDER(knit goods; textile) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends machine that extracts moisture and opens cloth to full width after it is processed in rope form:

Sews end of cloth to lead cloth, using portable sewing machine, or threads cloth through guides and pressure rollers, over beaters that revolve against direction of cloth to open it, and over scrimp rail that stretches and smooths cloth. Laps end of cloth around take-up beam. Starts machine and observes cloth passing over beaters to ensure cloth is opened to full width. Doffs full beams, using hoist, and transports cloth, using hand truck, for further processing.

May tend associated equipment, such as pleater, mangle or detacker.

8279-206 TASSEL-MACHINE TENDER(textile) DPT:685
tassel maker.
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends automatic machine that makes tassels for use on draperies and tapestries:

Inserts braid strip, to which tassel will be tied, into machine and fills hopper in machine with mixture of rayon and cotton. Depresses pedal to start machine, and observes operations to detect equipment malfunctions. Removes tassels from discharge end of machine and places tassels into cartons. Carries cartons to storage area.

8279-210 WINDING-MACHINE TENDER(textile) DPT:685
cloth beamer; cloth winder; reeler and tuber; rolling-machine operator.
GED: 2 SVP: 2 EC: 1 5 PA: M 4

Tends machine that winds cloth from one form to another, for further processing:

Threads cloth from supply truck, bale or roll through guides and rollers to rod, take-up roll or tube. Turns handwheel or moves flange into position to adjust width guides. Starts machine, and observes cloth to detect holes, irregular seams, printing imperfections, soiled spots and weaving defects. Pushes lever or depresses pedal to control speed of machine and tension on cloth. Cuts out flaws, using scissors. Secures end of roll with gummed tape or label. Removes full rolls or tubes by loading them onto hand truck, manually or with hoist. Records yardage-clock reading and number of cuts on order ticket. Oils and greases machine parts during operations.

May transport cloth to or from machine, using hand truck or dolly. May attach cloth to end of lead cloth, or combine several cuts of cloth, using portable sewing machine, or sewing manually. May press blocking stick against fabric to hold fabric firm during winding. May wind paper liner between layers of fabric. May tend machine equipped with water spray to dampen jute material for winding.

8279-214 CLOTH OFFBEARER(knit goods; textile) DPT:686
back tender; offbearer, textile machine; swing tender.
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Offbears cloth from machines that dye, finish, wash, treat, dry or otherwise process cloth:

Observes cloth as it winds onto rolls or passes through swing-folding attachment into trucks, and notifies supervisor or operator of processing or equipment malfunctions. Measures and feels cloth discharging from processing machines to verify that cloth meets specifications for width and dryness. Doffs cloth from machine by moving lever to lower blade that cuts cloth at seam, or by unravelling seams connecting lengths of cloth. Pushes roll of cloth onto platform, or lifts it from machine brackets, using hoist. Places cardboard tube on winding shaft and starts cloth winding on it. Replaces filled truck at swing-folding attachment. Pushes processed cloth to next processing station.

May assist operator in mixing finishes used in processing cloth. May regulate heat of drying cans and flow of water into washboxes by turning valves. May cut swatches from material in process, using scissors, and deliver them to laboratory for colour comparison. May assist operator in mounting rolls of cloth on brackets at feed end of machine, and assist in threading cloth through machine. May offbear cloth from a particular type of machine and be designated accordingly; for example,

Drying-Machine Helper
Dyeing-Machine Back-Tender(textile)

8279-299 OTHER TEXTILE PROCESSING OCCUPATIONS

This group includes textile processing workers, not elsewhere classified; for example, those who tend churns that treat rags, prepare samples of felt for use in colour matching and control, tend machines that dry staple lengths of synthetic fibre, and tend automatic crimping machines that curl synthetic fibres for doll hair. Typical examples of occupational titles covered by this residual group definition are:

Crusher-and-Binder Operator(textile)
Feltmaker and Weigher(textile)
Needle-Board Repairman(textile)
Singer(textile)

829-OTHER PROCESSING OCCUPATIONS

This minor group includes occupations, not elsewhere classified, concerned with processing tobacco, hides, pelts and a variety of other materials and products. These occupations are classified in the following unit groups:

- 8290** Foremen, Other Processing Occupations
- 8293** Tobacco Processing Occupations
- 8295** Hide and Pelt Processing Occupations
- 8296** Inspecting, Testing, Grading and Sampling
Occupations, Processing, n.e.c.
- 8298** Occupations in Labouring and Elemental
Work, Other Processing
- 8299** Other Processing Occupations, n.e.c.

8290-FOREMEN, OTHER PROCESSING OCCUPATIONS

This unit group includes occupations, not elsewhere classified, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.) concerned with supervising and co-ordinating activities of workers engaged in processing a variety of materials and products, such as, hides and pelts, tobacco, ice and candles.

8290-110 FOREMAN, HIDE AND PELT PROCESSING OCCUPATIONS(leather tan. & fur dress.) DPT:138

Supervises and co-ordinates activities of workers engaged in preparing hides, pelts and skins to make leather stock and finished furs, (Unit Group 8295):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Dye-House Foreman
Foreman, Beam Department
Foreman, Fur Dressing
Foreman, Hide House

Foreman, Leather Finishing

8290-114 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, MISCELLANEOUS PROCESSING(any ind.)
DPT:138

Supervises and co-ordinates activities of workers engaged in inspecting, testing, grading, sampling and other quality control work in the processing of materials, such as drugs, minerals, tobacco, hides and pelts, (Unit Group 8296):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.)

May supervise workers engaged in inspecting a particular product and be designated accordingly; for example,

Cigarette Inspector Foreman(tobacco)

Foreman, Wool Graders(leather tan. & fur dress.)

Supervisor, Pharmaceuticals and Toiletries Inspectors(pharm. & toil.)

8290-118 FOREMAN, TOBACCO PROCESSING OCCUPATIONS (tobacco) DPT:138

Supervises and co-ordinates activities of workers engaged in preparing and treating tobacco and in making cigars, cigarettes and other tobacco products, (Unit Group 8293):

Performs duties as described under master title, 01-250 SUPERVISOR/ FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Curing Room

Foreman, Stemming Department

Foreman, Threshing Department

Foreman, Tipping Department

8290-199 FOREMAN, MISCELLANEOUS PROCESSING OCCUPATIONS

This group includes processing foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in dipping, moulding, cutting and packing candles; tending filter presses that remove sediment and impurities from liquid concentrations and compounds; and tending machines that make, crush and cube ice. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Candle Making(misc. prod. fab., n.e.c.)

Foreman, Filtration(any ind.)

Foreman, Ice House(misc. prod. fab., n.e.c.)

8293-TOBACCO PROCESSING OCCUPATIONS

This unit group includes occupations concerned with preparing and treating tobacco, and with making cigars, cigarettes and other tobacco products. Occupations concerned with kiln-drying tobacco leaves are classified in Unit Group 7183, FIELD CROP AND VEGETABLE GROWING WORKERS.

Tobacco Preparing Occupations 8293-110 through 8293-142

8293-110 TOBACCO BLENDER(tobacco) DPT:386
leaf blender.
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Selects various grades of tobacco to produce specific blend, according to formula and knowledge of tobacco characteristics:

Removes leaves or hands bundles of tobacco from bales or bins. Examines and sorts tobacco according to texture, colour, variety, and locality grown. Feeds specified amounts of various grades and types of tobacco onto conveyor to obtain desired blend, or places tobacco in baskets, boxes or piles for processing.

8293-114 BLENDING-LINE ATTENDANT(tobacco) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends conveyors and machines that blend various types of tobacco in required proportions:

Starts conveyors to move continuous flow of various types of tobacco, through revolving drum that mixes tobacco, to feeders that add specified types of tobacco, through ordering cylinder that moistens tobacco, and into final blending machine. Sets timers to control blending and feeding speeds, and sets flow scales to control amount of tobacco fed, following specifications. Opens and closes valves to regulate flow of steam, hot air or water to ordering cylinder so that tobacco will be pliable and easily processed. Observes flow of tobacco and operation of conveyors and machines to ensure correct processing.

May be designated according to type of process involved; for example,

Bulk Blender

Cascade Blender

8293-118 CASING COOKER(tobacco) DPT:685
flavour maker.
GED: 2 SVP: 3 EC: 1 5 PA: M 4

Tends heated vats to mix and cook tobacco casing fluid (flavouring mixture):

Turns valve to admit steam into jacket of vat. Measures, weighs, and dumps solid and liquid ingredients into vat, following standard formula. Starts agitator to mix ingredients and prevent mix from boiling over. Starts pump, after mixture is cooked into syrup, to transfer casing fluid to storage tanks. Measures specific gravity of fluid, using hydrometer, and adds water, using hose, to obtain specified consistency.

May fill metal containers with mixture and install containers on casing machine that sprays casing fluid on tobacco to impart distinctive flavour. May tend pumps to transfer casing fluid from storage tanks to casing machines.

8293-122 CASING-MACHINE TENDER(tobacco) DPT:685
GED: 2 SVP: 3 EC: 1 4 PA: L 4

Tends machine that treats leaf or cut tobacco with casing fluid (flavouring mixture), using one of the following methods:

1. Starts machine, feed conveyors and pump to spray fluid on tobacco fed into revolving drum by conveyor. 2. Turns hand valve to admit fluid into vat. Moves controls to adjust tension on wringer rolls and starts wringer. Forks tobacco onto conveyor that feeds leaves through fluid and to wringer rolls that remove excess fluid from leaves. Maintains proper level and temperature of casing fluid in holding tanks by starting and stopping pumps and opening and closing steam valves.

8293-126 TOBACCO-CONDITIONER TENDER(tobacco) DPT:685
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends vacuum conditioner (steam-pressure chamber) that moistens opened hogsheads of tobacco for further processing:

Opens chamber door and pushes hogsheads of tobacco into chamber. Closes chamber door, starts vacuum pump, and turns valve to admit steam to chamber. Observes gauges and dials on control panel to determine when temperature and air, steam, and vacuum pressure reach specified levels to force steam through tobacco. Removes hogsheads from chamber after specified time.

8293-130 DRYER TENDER(tobacco) DPT:685

Tends dryers that remove excess moisture from cased tobacco, according to established formula:

Starts conveyor that carries tobacco through drying ovens and turns valves to admit steam to heat coils of dryers. Periodically feels tobacco to determine dryness and regulates heat to dry tobacco to specified limits.

May tend dryer that imparts distinctive flavour (toast) to tobacco. May tend revolving drum with blower that cools shredded tobacco after steaming or drying and be designated accordingly.
Cooler Tender

8293-134 STEM-FLATTENING-MACHINE TENDER(tobacco) DPT:685

stem conditioner; stem-roller-or-crusher tender.

GED: 2 SVP: 2 EC: 1 PA: M 3 4

Tends machine that flattens tobacco stems or stems and veins of tobacco leaves:

Starts conveyor that feeds tobacco to rollers of machine and forks tobacco from boxes into hopper of conveyor. Regulates flow of steam and water by setting dial to moisten tobacco and clean and cool rollers. Forks flattened stems into boxes.

8293-138 STRIPPING-MACHINE TENDER(tobacco) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that removes stems from leaves of tobacco and arranges stemmed leaves into books (bundles):

Starts machine by pressing button, and feeds leaf between feed rollers of machine that strips stems from leaves and cuts leaves into halves. Removes stacks of stripped leaves and ties them together. Separates leaves according to right or left halves. Dumps stems from machine into cans. Cleans machine and work bench, using rags and alcohol.

8293-142 TOBACCO-CUTTING-MACHINE TENDER(tobacco) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that shreds and cuts tobacco leaves:

Dumps tobacco leaves into machine hopper or starts conveyors and feeders by pressing buttons. Starts cutting machine and observes operation to ensure that machine is shredding tobacco according to specifications. Regulates flow of tobacco on conveyor, by pulling lever or turning dial, to prevent jamming. Replaces dull or worn knives, using wrench to loosen and tighten bolts that hold knives in position.

May mix various types of tobacco in required proportions prior to shredding. May tend machine that cuts shredded tobacco into granular form or for use as cigar filler and be designated accordingly; for example, Cigar Filler, Mixer and Shredder Granulating-Machine Tender

Tobacco Products Manufacturing Occupations

8293-162 through 8293-199

8293-162 CIGAR-MAKER, HAND(tobacco) DPT:684

GED: 2 SVP: 5 EC: 1 PA: L 4 7

Rolls cigars by hand:

Selects suitable filler, binder and wrapper leaves. Cuts or tears section of binder leaf to desired size and lays it on table. Takes filler tobacco and rolls it between palms of both hands. Lays rolled filler on binder and rolls them together to form bunch (inner part of cigar). Glues or twists end of binder to hold in position. Cuts wrapper leaf to desired size. Lays bunch on wrapper and rolls them together. Glues end of wrapper to hold in place. Presses cigars in moulds to obtain desired shape.

8293-164 CIGARETTE-MACHINE TENDER(tobacco) DPT:685

GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Tends cigarette-making machine that encases tobacco in continuous paper roll and cuts cigarettes from roll:

Places roll of cigarette paper on spindle. Threads cigarette paper between guide rolls and adjusts friction tension on holding spindles, using wrench. Sets monogram-printing device to print brand name on paper at specified position, using wrenches. Fills ink and glue reservoirs. Starts machine and observes operation to detect machine malfunction. Regulates flow of shredded tobacco to ensure that cigarettes contain specified amount of tobacco. Cleans paper scraps and waste materials from machine, using brush. Places roll of tipping material on spindle and fills hopper with filters, when making filter- or cork-tipped cigarettes. Replaces full catching trays.

May examine cigarettes discharged from machine for defects. May tend machine that forms containers used in packing cigarettes. May stack cases on pallets for storage or shipment. May be designated according to type of cigarette made; for example,

Filter-Cigarette-Machine Tender

8293-166 CIGAR MAKER, MACHINE(tobacco) DPT:685

GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Tends machine that rolls binder and wrapper leaves around filler tobacco to form cigars:

Presses button to start unit of machine that automatically cuts binder leaf and wraps leaf around filler tobacco to form bunch. Positions wrapper leaf over die of machine to obtain maximum wrapper possible from each leaf. Depresses pedal to lower knife that cuts leaf. Releases pedal to raise knife and start mechanism that removes cut leaf and wraps it around bunch. Observes filling, cutting and wrapping operations to detect machine malfunction.

May be designated according to type of machine tended; for example, Turret-Machine Tender

8293-170 PATCH WORKER(tobacco) DPT:684

GED: 2 SVP: 3 EC: 1 5 PA: L 4

Repairs defective or damaged cigars:

Examines rejected cigars for defects, such as holes, loose seams, colour spots and loose tucks. Cuts out colour spots, using knife. Pastes pieces of wrapper leaf of matching colour on cigar to patch holes. Pastes loose seams together. Dumps unrepairable cigars into hopper of re-roll machine.

8293-174 TWISTER, HAND(tobacco) DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4

Rolls leaves of tobacco together to form twists of chewing tobacco:

Places filler tobacco on leaves and rolls leaves over filler to form roll, using fingers and palms of hands. Folds roll in middle and rolls again to form twist. Periodically weighs twists to determine whether weight is within prescribed limits. Keeps work bench, trays and scale plate clean, using rags, scraper and brush.

8293-178 PLUG-CUTTING-MACHINE TENDER(tobacco) DPT:685

GED: 2 SVP: 2 EC: 1 PA: M 4

Tends machine that cuts cakes of tobacco into slice-plug or granular smoking tobacco:

Arranges cake of tobacco on bed of machine. Starts machine and feeds tobacco under reciprocating knife. Holds slices of tobacco together in form of plug, using stick, and slides sliced tobacco onto tray or feeds slices between rollers that reduce slices to granular form. Replaces dull knife blades, using wrench. Cleans machine and work area, using brush and steam hose.

May tend machine that cuts cakes of chewing tobacco into plugs of specified size.

8293-182 PLUG MOULDER, MACHINE(tobacco) DPT:685

GED: 2 SVP: 2 EC: 1 PA: H 4

Tends hydraulic presses that form plugs or twists of smoking or chewing tobacco, using one of the following methods:

1. Dumps loose tobacco into machine mould and places canvas and plastic block over tobacco. Rotates press turntable and positions mould under ram of press. Presses pedal to lower and raise hydraulic ram that compresses tobacco to shape of mould. Lifts canvas and plastic block from top of mould and removes plug of tobacco. 2. Places lumps or twists of tobacco in layers in pot (mould). Closes door of pot and tightens nuts to secure door, using wrench. Depresses treadle or turns hand valve to force ram against pot. Releases ram and removes tobacco plugs or twists. 3. Feeds lumps of tobacco into shaping cells of press that automatically compresses lumps into plugs of chewing tobacco. Turns hand valve to release ram and removes plugs from press.

May tend manually-operated press to perform second pressing on cut pieces of tobacco plugs. May examine plugs of tobacco for defects in wrapper leaf. May weigh plugs to determine conformance to standards.

8293-199 OTHER TOBACCO PROCESSING OCCUPATIONS

This group includes tobacco processing workers, not elsewhere classified; for example, those who estimate weight, by grade lots, of tobacco presented by grower to marketing board for sale, or tend machine that glues plastic tips on cigars. Typical examples of occupational titles covered by this residual group definition are:

Crop Estimator(tobacco)
Tipping-Machine Tender(tobacco)

8295-HIDE AND PELT PROCESSING OCCUPATIONS

This unit group includes occupations concerned with preparing hides, pelts and skins to make leather stock and finished furs. Activities include: trimming, scraping, scouring, tanning, staining and dyeing.

8295-110 SPLITTER(leather tan. & fur dress.) DPT:380
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Sets up machine that splits hides into layers:
Turns setscrews or handwheels on machine table to adjust rollers according to desired thickness of hide. Verifies thickness of layers split from hides, using gauges. Realigns or replaces parts, such as machine belt, knife and rollers.
May read counter and record number of hides split by machine tender.
May sort hides according to quality. May sharpen cutting blades.

8295-114 HIDE AND SKIN PREPARER(leather tan. & fur dress.) DPT:684
GED: 2 SVP: 4 EC: I 4 7 PA: M 4 7

Treats hides or skins in solutions to clean, cure, unhair, pickle, dye, oil or tan them, performing any combination of the following duties:
Turns valves to fill equipment with water. Weighs or measures processing agents, such as lime, sodium sulphide, salt, sulphuric acid or detergent, following standard formulas. Dumps agents and skins into vats, revolving drums or mixers. Pulls switches or levers to start rotation of drum or paddle in vat, or stirs skins in vat by hand for specified period. Starts and stops pumps to empty and refill drums or vats. Carries out similar tasks when dyeing or oiling hides. Examines and feels skins for defects, such as cuts, tears or blemishes. Bundles or stacks skins and conveys them to other workers for further processing, using hand truck.
May take sample piece of leather and boil it in water to test completeness of tanning. May verify salinity, temperature or acidity of solutions, using salinometer, thermometer or pH meter. May be designated according to equipment used or process involved; for example,
Bater
Colourer, Hides
Drum Attendant
Limer
Pickler
Tanner

8295-118 PELT DRESSER(leather tan. & fur dress.) DPT:684
GED: 2 SVP: 4 EC: I 6 7 PA: M 4 7

Cures and dresses fur pelts to improve their lustre and beauty or to restore natural appearance:
Prepares washing and curing solutions according to formulas, and places fur pelts in vats or revolving drums containing solution to clean, soften and preserve them. Removes particles of flesh and fat from pelts and skins, using hand or powered knives as determined by thickness and weight of pelt. Examines skins to detect defects, such as cuts and tears.
May record defects and sort furs according to grade. May remove long coarse hair from pelts and even length of underlying fur, using shaving knives. May oil and clip pelts.

8295-122 FLESHER, HAND(leather tan. & fur dress.) DPT:684

beamer, hides.

GED: 2 SVP: 3 EC: I 4 6 PA: M 4 7

Removes particles of flesh and fat from hides or pelts prior to curing or other processing, using either of the following methods:
1. Positions wet skin on beam. Pulls or pushes two-handled knife over surface of skin to remove flesh and hair. 2. Scrapes particles from pelt or skin with knife or works skin backwards and forwards over fixed steel blade. Piles scraped skins on hand truck.
May reduce thickness of hides by paring with machine or hand knife.
May cut skin into strips.

8295-124 FUR PLUCKER(leather tan. & fur dress.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Removes guard hairs (long coarse hairs) from skins of water animals such as beaver, muskrat, nutria and seal and evens length of underlying fur:
Tacks skin, fur side up, on beam. Strokes fur from head to tail using blunt-edged beaming knife to remove loose hairs and flatten fur. Dusts fur with powder to make guard hairs more visible for plucking. Plucks fur by either one of the following methods: 1. Places skin over lead guide of plucking machine with leather side of skin downwards. Starts metal-vaned roller and rubber roller of plucking machine by depressing foot pedal. Moves skin back and forth over guide between rollers to remove long or guard hairs from fur. 2. Cuts off guard hairs and evens fur over entire skin by shaving with thin, keen-edged knife.

8295-126 FUR-FLOOR WORKER(leather tan. & fur dress.) DPT:685
GED: 2 SVP: 3 EC: I 7 PA: M 4

Cleans and dresses pelts, performing any combination of the following tasks:
Cuts pelts on belly side from neck to tail with knife to facilitate further handling. Feeds pelts into cylinder of combing machine that untangles hair, or combs pelts by hand, using metal comb or steel bristle brush. Loads, starts, stops, and unloads beating machine that removes loose hair and foreign matter from pelts. Brushes or massages grease onto skin side of pelts to restore oils removed in dyeing and tanning processes, or loads pelts and grease into revolving drum for specified time. Loads pelts and sawdust into revolving drum to tumble pelts in sawdust to dry, clean, and soften them. Stops drum after specified interval and transfers pelts to revolving cage to remove sawdust from pelts. Stretches pelts to open pores and soften skin by pulling skin back and forth over edge of metal bar or by feeding pelt onto stretching device or into pulling machine. Trims fur with scissors or powered clippers to even length of hairs. Hangs pelts over slats to dry after cleaning, dyeing, or oiling tasks have been performed. Carries or pushes pelts on cart to next work station.
May be designated according to specialized task performed or machine tended; for example,
Beating-Machine Tender
Comber
Greaser

8295-130 LEATHER STRETCHER(leather tan. & fur dress.) DPT:685

blocker; leather staker.

GED: 2 SVP: 3 EC: I 6 PA: M 4

Stretches leather, hides or pelts, using one of the following methods:
1. Positions hide between jaws of reciprocating arm of staking machine and starts machine to flex (stake) and stretch hide. Shifts position of hide to flex entire area. 2. Lays hide face down on staking table and brushes inside of hide with water. Stretches hide by hand and clamps edges to staking table to block (shape) hide. Turns on ultraviolet heater and moves heater along track of staking table to dry hide. 3. Immerses hide in water to dampen it and make hide adhere to sloping hot plate. Swings hide flat against drying plate and smooths out wrinkles, using slicker. Closes dryer, sets temperature gauge and timer as specified, and starts drying cycle. Lifts hide from dryer at end of drying cycle. Piles stretched and dried hides on pallets for removal and further processing.

8295-134 SHAVING-MACHINE TENDER(leather tan. & fur dress.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: M 4

Tends machine that scrapes flesh or hair from pelts, hides or skins, shaves hides to uniform thickness, or shears fur or wool-bearing pelts to produce pelts with hair of specified length, using either of the following methods:

1. Turns handwheel or setscrew to adjust feed roller to specified height. Places pelt or hide on roller and presses pedal to raise roller that feeds skin to clippers or revolving blades. Verifies thickness of skin, using micrometer. 2. Arranges pelt, fur side up, on cloth-covered roll, and fastens it to pins protruding through cloth. Turns setscrews to adjust clearance between rollers according to thickness of pelt and amount of fur to be sheared off. Starts machine by pressing pedal, and guides pelt through rollers, the upper of which is equipped with rotary blade that shears fur from pelt.

May sharpen cutting blades, using whetstone. May be designated according to operation performed; for example, Fleshing-Machine Tender
Fur-Cutting-Machine Tender
Pelt Shearer

8295-136 FUR BLENDER(leather tan. & fur dress.) DPT:684
GED: 2 SVP: 2 EC: I PA: L 4 7

Tints and dyes natural and synthetic furs according to specifications to enhance appearance, by applying liquid dye:

Applies tints and dyes to tips of guard hair or to all surface hair, using feather, brush or spray gun, to produce lustrous finish, to accentuate colours and shades of furs, or to simulate natural furs.

May apply dye to specified patterns, such as leopard spots and tiger stripes, using template. May specialize in applying dye to orlon synthetic materials, and be designated accordingly, Orlon-Pile Blender

8295-138 MEASURING-MACHINE TENDER(leather tan. & fur dress.) DPT:585
GED: 2 SVP: 2 EC: I PA: M 4

Tends machine that measures area of finished leather:

Sets automatic counter at zero. Starts machine and feeds leather between rollers that carry it past photo-electric sensing device to automatic counter or under measuring wheels which measure area. Reads counter and chalks number of square feet onto surface of leather. Maintains records of the amount of leather processed.

May total and tie leather pieces into bundles for shipment.

8295-142 BUFFER, LEATHER(leather tan. & fur dress.) DPT:685
burnisher; leather sander.
GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Tends machine that polishes or roughens hides or skins to specified finish:

Turns setscrews to regulate distance between buffing rollers, according to thickness of hide. Positions hide between rollers and starts machine that automatically buffs complete hide, or holds half of hide while rollers buff surface of other half and then repeats buffing operation on unbuffed portion of hide.

May tend machine equipped with abrasive-covered rollers that form nap on surface of leather and be designated accordingly, Sueding-Wheel Tender

8295-146 PELT STRETCHER(leather tan & fur dress.) DPT:685
boarding-machine tender; puller, machine.
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that stretches, softens, and cleans pelts:

Places pelt on slanted board or feeding roller. Depresses pedal to elevate board or roller to bring it into contact with rotating roller. Holds pelt and guides it under rotating roller as machine stretches and softens it, and removes undesired flesh from skin side.

May examine pelts for defects and sort pelts according to grade.

8295-150 WOOL PULLER(leather tan. & fur dress.) DPT:687
GED: 2 SVP: 2 EC: I PA: M 4 7

Removes wool from sheep pelts and sorts wool into bins:

Holds pelt against angled table and pulls wool from pelt by hand. Examines wool, and sorts and places it in designated containers according to colour, texture, and length. Removes remaining wool from pelt, using scraper or depilatory. Places stripped pelts on rack or truck.

May use shears to cut off brand marks and wool around head and feet.

8295-199 OTHER HIDE AND PELT PROCESSING OCCUPATIONS

This group includes hide and pelt processing workers, not elsewhere classified; for example, those who tend ovens equipped with degreasing solvent sprays that remove fats and oil from leather. A typical example of an occupational title covered by this residual group definition is:

Degreasing-Equipment Tender(leather tan. & fur dress.)

8296-INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, PROCESSING, N.E.C.

This unit group includes occupations, not elsewhere classified, in inspecting, testing, grading and sampling work as described under the term titles, 02-170 INSPECTOR (any ind.); 02-430 TESTER (any ind.); 02-150 GRADER (any ind.); and 02-330 SAMPLER (any ind.); concerned with quality control activities in the processing of materials or products; such as, drugs, minerals, tobacco, hides and pelts.

8296-110 INSPECTOR, PHARMACEUTICALS AND TOILETRIES(pharm. & toil.) DPT:267
pharmaceutical inspector.
GED: 4 SVP: 7 EC: I PA: S 5 7

Conducts testing and quality control programs during production of pharmaceuticals and toiletries, to ensure conformance to standards and regulations:

Participates in establishing procedures for testing and quality control of products, according to established techniques of sampling, controlled production, testing, and statistical analysis of test results. Reviews laboratory-test reports, charts, and similar data prepared for each batch of product under test, to ensure conformance to government standards and company or consumer specifications, as determined by accepted laboratory procedures and experience with previously tested products. Recommends full-scale production of batches meeting quality standards and destruction of rejected batches, as authorized by supervisor. Investigates customer complaints of ineffective, stale, toxic or misbranded products, by reviewing production records and test reports. Recommends procedures for rectifying valid complaints and preventing recurrence. Confers with government inspectors and quality-control staff to resolve problems affecting manufacture and sale of company products.

8296-114 BLUE-LEATHER GRADER(leather tan. & fur dress.) DPT:287
GED: 3 SVP: 7 EC: I PA: M 4 7

Inspects, evaluates, and grades chrome-tanned hides (blue leather), and determines procedures for subsequent leather processing:

Examines tanned hides to detect imperfections such as brand marks, scars and uneven thickness. Feels hides to determine weight of hide and quality of surface grain. Decides processes to which hide should be subjected and finishes which should be applied to obtain top market value for product, using knowledge gained through extensive experience in all phases of leather manufacture. Sorts hides and tags or calls out identifying information to recording clerk, according to hide characteristics and quality.

8296-118 CIGARETTE TESTER(tobacco) DPT:387
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Tests cigarettes and cellophane wrappers to ensure that products conform to company standards:
Feeds sample from cigarette-making machine into hopper of weight recorder that tallies weight of each cigarette. Computes average weight of cigarettes in sample and compares average weight with standard to determine deviations. Examines cigarettes at intervals to detect imperfections such as loose ends, stems, stemholes and defective filters and defective glue lines in cigarette paper and packages. Slits cigarette paper, places tobacco in container and places container in electric moisture meter to determine moisture content. Weighs tobacco from specified number of cigarettes and compares individual weight with standard to determine deviations. Removes cellophane wrapper from cigarette pack, and tests resistance to air by slipping wrapper over suction device of instrument that draws air through wrapper and indicates amount of airflow on gauge. Records test finding, date and machine number from which samples were taken. May place tobacco from specified number of cigarettes in agitator equipped with series of screens to separate shreds according to size, and weigh screenings to determine percentage of each size of shreds in single cigarette, using conversion table.

8296-122 LEATHER SORTER(leather tan. & fur dress.) DPT:387
hide sorter.
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Inspects and sorts raw and dressed hides:
Examines hides for defects, such as brand marks, cuts, and scars, and trims defects from hides, using knife or shears. Verifies weight of hide, using thickness gauge. Sorts hides manually into piles according to qualities, such as colour, size, grain and weight. Returns defective hides for reprocessing or disposal.
May be designated according to type of leather sorted; for example, Patent-Leather Sorter

8296-126 HOGSHEAD INSPECTOR(tobacco) DPT:487
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Inspects sample of tobacco from hogsheads to verify grade and determine condition of tobacco:
Inspects tobacco for damage, and removes, weighs and records amount of tobacco damaged. Examines, feels and smells leaves to verify grade. Computes moisture content of tobacco by weighing sample before and after drying in oven for specified time. Notifies foreman when moisture content or condition of tobacco does not meet standards.
May grade cured tobacco leaves preparatory to marketing and be designated accordingly; for example, Tobacco Grader

8296-130 CIGARETTE INSPECTOR(tobacco) DPT:587
GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Inspects cigarettes for defects to ensure conformance to standards:
Collects cigarettes from each machine tray, and examines them for defective printing, filling, sealing and cutting. Examines filter-tipped cigarettes for defectively formed and attached filters. Places specified number of cigarettes in tray gauge to verify length. Verifies position of brand name printed on wrapper, using gauge. Weighs cigarettes to determine conformance to standard, and records weight and time of weighing. Measures seam of cigarette, using magnifying glass and graduated scale. Compares colour and texture of cigarette paper samples with specifications. Notifies machine tenders of deviations from standards.
May test strength of paper, using tensile-strength tester.

8296-134 HIDE-AND-PELT INSPECTOR(leather tan. & fur dress.; slaught. & meat pack.) DPT:587
GED: 2 SVP: 4 EC: 1 4 7 PA: H 3 4 7

Inspects animal hides, pelts and slunk (unborn animal) skins for defects, and grades them according to condition, size and weight:
Spreads hides, pelts or skins on floor or table, and examines or probes them with wooden skewer or finger to detect defects, such as grub holes, cuts, brands and residual meat and fat. Weighs hides, using platform scale and estimates weight of foreign material clinging to

hides. Outlines defective areas on hide with chalk or on pattern diagram. Sorts hides by grade. Records production data, and marks grade of hides on tags according to condition, size and weight. Tags hides or bundles of skins and places hides on pallet or truck.
May trim excess fat and flesh, and cut off snout, ears and tail, using knife, or return fatty pelts to scraping machine. May inspect and grade seal or other skins.

8296-138 WOOL-AND-PELT GRADER(leather tan. & fur dress.) DPT:587
GED: 2 SVP: 4 EC: 1 7 PA: H 3 4 7

Grades sheep or lamb pelts and wool according to quality specifications:
Examines and feels wool to determine its colour, texture and length, and sorts pelts or loose wool into grades for pulling or drying. Inspects pickled slats (sheep skins) for cuts, tears, blemishes and skin quality, and stacks them in piles according to grade. Records quantity and grades of wool or pelts inspected.

8296-142 CIGAR INSPECTOR(tobacco) DPT:687
fresh-work inspector.
GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Inspects cigars to determine conformance to standards:
Weighs random samples to determine that cigars are of prescribed weight and notifies machine operators when weight is not standard. Examines cigars for broken or off-colour wrappers, soft spots, defective patches and variations from standard length. Sets aside imperfect cigars, and sorts them according to brand, defect and type of repair required. Stacks examined cigars in bins or boxes and attaches identification label to container. Fills trays with perfect cigars and loads cigars in hand press prior to packaging.

8296-146 MOISTURE-CONTENT TESTER(tobacco) DPT:587
GED: 2 SVP: 3 EC: 1 5 PA: L 4

Tests moisture content of tobacco in various stages of processing by either of the following methods:
1. Places tobacco sample in electric hygrometer and turns on current. Observes hygrometer and compares reading with conversion chart to determine moisture content. Records date, time, temperature, moisture content and reading for each sample tested. 2. Weighs sample of tobacco and places it in oven. Removes and weighs sample after specified time. Compares difference in weights with conversion chart to determine percentage of moisture content.
May be designated according to method used; for example, Moisture-Meter Operator

8296-150 GRAIN SAMPLER(whole. trade) DPT:687
GED: 2 SVP: 3 EC: B PA: L 3 4

Removes and examines samples of grain from freight cars, boat holds and storage bins, for subsequent grading:
Pushes sample-taking metal tube into grain at regular intervals or, if grain is being loaded, obtains samples from loading spout. Examines samples for uniformity. Places sample in metal basket, tags and forwards it to government inspector. Sets aside individual samples of grain that differ from lot and notes estimated quantity represented. Prepares report for government inspector indicating source of grain sample and original grading on bin slip.

8296-154 TOBACCO-SAMPLE PULLER(tobacco) DPT:587
GED: 2 SVP: 2 EC: 1 PA: L 4

Collects and grinds samples of tobacco for use in moisture, blending and flavouring tests:
Takes handful of tobacco leaves from conveyor at discharge end of redrying machine, or extracts samples of unprocessed tobacco from hogshead, using electric auger. Feeds sample into electric grinder. Pours ground tobacco into container, and marks date, hogshead number, grade and time collected on container. Carries containers to laboratory for moisture, blending and flavouring tests.

**8296-199 OTHER INSPECTING, TESTING, GRADING
AND SAMPLING OCCUPATIONS,
MISCELLANEOUS PROCESSING**

This group includes processing inspectors, testers, graders and samplers, not elsewhere classified; for example, those who inspect purchased tobacco for acceptance of grade, deterioration or defects; sort tobacco leaves according to colour and condition for use as wrappers or binders, or take samples of products or raw materials for laboratory analysis. Typical examples of occupational titles covered by this residual group definition are:

Claims Inspector(tobacco)
Leaf Sorter(tobacco)
Raw Material Sampler(any ind.)
Sampleman(any ind.)

**8298-OCCUPATIONS IN LABOURING AND
ELEMENTAL WORK, OTHER PROCESSING**

This unit group includes occupations, not elsewhere classified, in labouring or other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with processing materials and products, such as hides and pelts, tobacco and feathers.

**8298-110 LABOURER, LEATHER PROCESSING(leather tan.
& fur dress.) DPT:686
tannery worker.**

GED: 2 SVP: 2 EC: 1 4 5 6 7 PA: H 3 4

Performs any combination of the following tasks in the processing of hides and pelts in various sections of tannery:

Shovels salt on uncured hides to prevent decomposition and discoloration. Cuts cord from bundles of cured hides and spreads hides on table or floor for processing. Trims ragged edges, thin areas and brand marks from hides, using knife. Dumps tannery refuse, such as skin and fat into bin and covers refuse with lime to prevent putrefaction. Applies solvent to wool of sheepskin to remove painted brands, using rag and brush. Hangs sheepskins in steam room and turns valve to admit steam that loosens wool. Moves sheepskins to depilating machine or removes loosened wool from skins by hand. Collects wool after depilation and dumps it into washing machine. Shovels washed wool into centrifugal drier to remove moisture. Feeds hides to cutting machine that divides hides into sides for further processing. Counts and ties specified number of hides into bundles. Conveys bundles of hides between workers or departments, using hand truck. Dumps hides into drums or vats containing various chemical solutions that dye, oil, tan, depilate, delime, clean or preserve hides. Dampens hides with water, using sponge, or sprays specified solution on hides, preparatory to further processing or finishing. Pastes or clips wet hides on frames to prevent wrinkling and slides frames into drying tunnel. Removes dry hides from frames and stacks them on cart. Feeds and off-bears material from machines that clean, buff and smooth finished hides by pressing, brushing or vacuuming. Cleans vats, tanks, and drums of lime, tanbark and refuse, and scrubs walls and floors of tannery, using brushes, scrapers and solvents. Sprays disinfectant in trucks or freight cars used to haul hides to tannery. Spreads solutions of seasoning, coloured pigments or acrylic emulsions on leather for waterproofing or finishing.

May specialize in performing specific tasks and be designated accordingly; for example,

Hide Trimmer
Leather Coater
Sprayer, Hand

**8298-114 LABOURER, TOBACCO PROCESSING(tobacco)
DPT:686**

GED: 2 SVP: 2 EC: 1 PA: H 3 4 7

Feeds and off-bears tobacco from processing machines, and performs any combination of the following tasks in making various tobacco products:

Hangs bundles of tobacco leaves of similar-colour shade on sticks moving on chain conveyor to processing machines. Loads and unloads leaf or shredded tobacco onto or from racks or conveyors, using shovel, pitchfork or electric hoist. Sprays hands of tobacco leaves with

water or casing fluid, using spray gun, or places trays of tobacco on racks in conditioning room for specified time. Dumps or forks tobacco into chutes or hoppers of threshing, shredding, mixing, casing, screening and cigar- or cigarette-forming machines. Feeds packs of defective cigarettes into machine that opens packages, removes cigarettes, and dumps them into machine that cuts paper and filter from cigarettes to reclaim tobacco. Wraps plugs of chewing tobacco in wrapper leaves preparatory to moulding. Feeds cigars into machine that automatically aligns cigars with piercing rods to pierce draft holes in ends of cigars. Opens rejected cigars to reclaim tobacco, using knife, and places binder leaves and filler tobacco in separate boxes for reprocessing. Places empty containers at discharge end of machines to catch tobacco or tobacco products, and conveys filled containers between workers or departments, using hand truck. Starts and stops conveyors. Removes stems, off-colour tobacco and foreign material, such as dirt, paper and string from tobacco as it moves along conveyor. Brushes tobacco from clogged conveyors, screens or riddles of sifting machines, using brush or broom. Feeds lumps of tobacco to hydraulic or manually operated press to shape and compress them into plugs.

May specialize in performing specific tasks and be designated accordingly; for example,

Cigarette-Machine Feeder
Filler Feeder
Plug Wrapper, Hand
Riddler Cleaner
Screening-Machine Feeder

**8298-118 FEATHER WASHER-AND-DRYER(furn.) DPT:686
GED: 1 SVP: 2 EC: 1 7 PA: L 4**

Feeds feathers into machines that wash, sterilize, dry and separate feathers used in stuffing household goods such as mattresses, pillows and comforters:

Fills washing machine with feathers, washing compound and disinfectant, by hand. Opens valve to admit water and starts machine. Opens valves to drain water and admit clean water to rinse feathers. Transfers wet feathers to drying machine, manually. Starts machine that dries feathers with steam and hot air. Opens air valve to blow feathers from machine, separating down from feathers by gravity, and transferring feathers to storage bins.

May feed machines that curl (crush) feathers, mix various grades of feathers, or beat feathers to remove dust and dirt. May sort and weigh feathers before loading them in storage bins preparatory to further processing.

**8298-199 MISCELLANEOUS OCCUPATIONS IN
LABOURING AND ELEMENTAL WORK,
OTHER PROCESSING**

This group includes processing labourers and other elemental workers, not elsewhere classified; for example, those who salvage tobacco from defective cigarettes, divide hides into sides by hand, or apply depilatory solution to pelts to loosen wool or hair. Typical examples of occupational titles covered by this residual group definition are:

Cigarette Salvager(tobacco)
Hide Divider, Hand(leather tan. & fur dress.)
Painter, Depilatory(leather tan. & fur dress.)

8299-OTHER PROCESSING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, primarily concerned with operating and tending equipment to process a variety of materials and products. Activities include: forming and coating acoustical tile; cutting insulation bats to size and attaching paper backing; coating pharmaceutical tablets; moulding and decorating candles; grinding materials in ball or rod mills; cleaning processing equipment; screening material to remove foreign matter or to obtain particles of specified size; blending materials to make brushes; and making, crushing or cutting ice.

8299-110 COATER-LAMINATOR(paper prod.; textile) DPT:362
GED: 3 SVP: 6 EC: I 7 PA: M 2 4 5 7

Operates machine that coats and laminates paper, paperboard, foil, film or cloth with adhesive or other mixtures, and directs crew in feeding, drying and winding activities:

Adjusts spreader roller and aligns coating bar to spread coating to specified depth on material, using hand tools. Directs crew members to load material onto machine-feed-rolls and thread material through guide and support rollers. Turns valves to start automatic system that pumps specified coating mixture into coater pans. Moves controls on panel to start machine. Adjusts controls to maintain temperatures, speed, pressure and other factors to produce specified product. Splices breaks in material or at ends of rolls to maintain continuous operation. Cuts samples of product from line, and visually examines coating for defects and general appearance. Measures depth of coating, using scale that compares sample to standard. Observes activities of crew during material feeding, coating, laminating, drying and winding operations. Tests strip of laminated material on tension tester to measure strength of bond between laminated surfaces. Maintains log of production data and equipment performance. May operate machine to coat single synthetic film with adhesives and other materials to produce pressure-sensitive tape.

8299-114 WALLBOARD LAMINATOR(asbestos & min. wool) DPT:362
GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Operates gluing machine, hydraulic press, cement-cutting saw and chamfering machines to produce laminated-asbestos-cement wallboard:

Reads work order to determine product specifications, machine settings and materials. Mixes adhesives according to formula and dumps mixture into gluing-machine reservoir. Adjusts gluing machine guides to size and shape of panels. Turns valves to regulate pressure in hydraulic press. Adjusts chamfering machines, saw guides and fixtures to cut and bevel panels to specified size, using hand tools. Actuates control switches and operates equipment in a series sequence to produce laminated products. Directs fork-lift operator and other workers to load and unload machines. Maintains record of production and equipment performance. May operate automatic equipment to laminate sheets of asbestos and foam-plastic products for use as insulation panels.

8299-118 ACOUSTICAL-TILE SURFACER(asbestos & min. wool; paper prod.) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Tends series of machines that perforate, groove, and imprint patterns on insulation-board panels to form acoustical tile:

Adjusts height of saws to control depth of grooves to be cut into panels, using gauge, and wrench. Dumps sacks of ground walnut shells into hopper of blasting machine that blows walnut shell fragments onto panels to imprint decorative patterns on surface. Starts machines and spaces pattern templates on feed conveyor. Feeds panels into machines that automatically groove and perforate panels, positions panels on pattern templates and blasts specified design upon panel. Observes operation and adjusts operating irregularities, such as improper grooving or perforating and misalignment of pattern templates.

8299-122 INSULATION-BATT-CUTTER OPERATOR(asbestos & min. wool) DPT:682
GED: 3 SVP: 4 EC: I PA: M 4

Operates machine that slits and cuts mineral-wool or fibreglass blankets into batts of specified dimensions and encloses batts in paper covering:

Installs and adjusts slitting saws, edge cutters, dividers, flange-sealing rollers and paper-guide rollers, using hand tools. Positions paper rolls in upper and lower machine racks, using hoist, and secures rolls in position with wrench. Threads leading edges of paper and blanket into feed rollers. Adjusts valves to control flow and temperature of liquid asphalt to provide adhesive surface. Starts machine and observes operation to detect equipment malfunctions. Stops machine to remove sub-standard material and makes necessary adjustments. May adjust position of blanket-feed table under master roller to control thickness of batt.

8299-124 TENONER-COATER OPERATOR, ACOUSTICAL TILE (asbestos & min. wool; paper prod.) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Operates machine that automatically cuts, smooths, mortises, tenons, and applies coating of sizing to acoustical tiles made of various materials:

Changes and adjusts saws and cutters according to specifications, using hand tools. Turns dials to regulate temperature of pressing irons. Adjusts pressure of irons to obtain smooth finish. Adjusts rollers that control amount of sizing to be applied to tiles. Starts machine and automatic-feed conveyor. Periodically measures finished pieces for squareness and depth of cut, using gauges. Observes each phase of processing and makes necessary adjustments. May operate machine equipped with attachment for painting flanges and bevels of tiles.

8299-126 CANDLE DECORATOR(misc. prod. fab., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I PA: S 4 7

Decorates candles following prescribed patterns and customer's specifications:

Positions goldfoil and other decorative materials on sheets of wax and presses out ornaments, designs, labels, sprays and other figures, using heated hand dies. Attaches decorations to candles, using hand tools and Bunsen burner.

May paint surface of candle with clear lacquer and sprinkle area with coloured sparkles. May prepare sheets of wax by melting wax in pot over electric burner, pouring hot wax over paper and placing in tank of cold water to harden. May fashion wax design on candles to simulate snow by adding steric powder to hot wax, whipping the mixture, and applying to cold preformed candle by hand.

8299-130 CANDLE MAKER(misc. prod. fab., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I PA: M 4 7

Makes candles, performing any combination of the following duties:

Cuts wicks to specified lengths, using knife or scissors. Hangs wicks from spacings in metal frames preparatory to dipping. Dips wicks manually or with aid of motorized mechanism into vat of molten wax mixture or pours mixture, using containers, on wicks to build up candles to specified circumferences. Inserts wicks through centre of moulds and attaches ends to racks. Pours molten wax mixture into moulds, using container or opens valves to admit wax into moulds. Adjusts steam and coolant valves to maintain prescribed temperature in mould. Turns hand crank of ejection mechanism, releasing candles from moulds into rack after specified time. Scrapes remaining wax from moulds, using hand tools. Cuts, trims or shapes candles by placing them in heated dies. Examines candles for defects in shape and finish, and grades them according to type, colour and size. Tends machine that fastens candlewicks to metal candle bases. Adds colour ingredients to molten wax, according to customer's specifications.

May insert wicks and bases in openings of moulded candles by hand. May tend machine equipped with heated dies that form contour of bottom end of candle. May be designated according to specific tasks performed; for example,

Candle Cutter
Candle Dipper
Pourer, Candle

8299-134 ICE-CHIP-MAKER TENDER(utilities, n.e.c.) DPT:685
GED: 2 SVP: 4 EC: B PA: L 2 4

Tends refrigeration and conveying equipment that produces and deposits ice chips into hold of fishing vessel to preserve fish:

Turns valves to admit refrigerant to freezer unit and salt water to cylindrical drum inside freezer unit. Starts motor-driven rotary scraper that scrapes ice from inner surface of drum and deposits it in storage bin. Starts mechanical spreader that spreads ice chips evenly in bin. Positions feeding and discharge chutes of conveyor to allow ice chips to flow from storage bin to ice-blowing machine. Connects length of pipe to blower and lowers pipe into hold of fishing vessel, using hand tools. Descends ladder into ship's hold to estimate amount of ice required. Starts conveying and ice-blowing equipment to force ice into hold, and stops equipment on signal from crew member. Estimates and records weight of ice delivered. Defrosts refrigeration equipment

by directing hot air to inside of freezer unit. Lubricates moving parts and performs routine maintenance on equipment, using hand tools.

8299-138 MILL TENDER(any ind.) DPT:685
GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Tends one or more mills that grind materials, such as chemical compounds and ingredients for food and drugs: Pushes lever of ball-storage bin to add specified quantity of balls to mill or adds balls to mill manually. Opens flow gate or valves and starts conveyor to load mill or dumps material into mill by hand. Secures cover plate, using wrench. Starts and runs mill for specified time depending on size of load, grindability of material and required fineness. Removes cover plate, attaches grid and starts mill to discharge contents. Regulates inflow of materials and observes outflow to ensure attainment of specified product. May tend mill utilizing vacuum or pressure feed systems. May tend steam-jacketed mill that beats materials during processing. May keep production records. May be designated according to grinding agent used or material ground; for example, Ball-Mill Tender Pigment-Mill Tender

8299-142 LINSEED-OIL EXTRACTOR(animal & veg. oil) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: M 4

Tends equipment that grinds, cooks and presses flaxseed to extract linseed oil used in manufacture of products, such as lacquer, paint or soap, and to make linseed meal: Shovels flaxseed into hopper of grinding mill and starts mill to grind flaxseed into meal. Dumps ground meal into tempering kettle and adjusts controls to regulate and maintain specified temperature. Turns valve to dump cooked flaxseed between mats to form cakes. Places mats in bed of hydraulic press and lowers ram to press cakes and remove linseed oil that flows into drums or storage area.

8299-146 PROCESSING-EQUIPMENT CLEANER(chem., n.e.c.; petrol. & coal prod.) DPT:684
GED: 2 SVP: 3 EC: B 4 5 6 7 PA: H 2 3 4

Cleans storage tanks, filter presses, pipelines, pressure systems and other processing equipment used in chemical and petroleum industries, performing any combination of the following duties: Opens vacuum-system valves to remove vapours from vessels and locks electrically-driven agitator in position. Steams and ventilates vessels, using steam and air hoses. Removes solidified material and other foreign matter from vessels, tanks, valve openings, filters and screens, using nonsparking-safety tools, cleaning compounds and high-pressure-water hose. Removes core or center of filter, cloth wrapper, metal screens and other strainers, using hand tools. Washes reusable canvas, using water and solvents. Cleans metal screens. Replaces worn filters and reassembles equipment after cleaning. Turns valve to drain solutions from equipment for reuse. Cleans machinery, fans and ducts, using brushes and rags. May test storage tanks or other vessels for presence of gas, using testing meter, prior to entering vessel for cleaning purposes.

8299-150 ICE MAKER(utilities, n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 4 PA: M 4

Tends equipment that freezes water into ice, performing any combination of the following tasks: Opens valves to fill containers with specified amounts of water, and lowers containers into freezing tanks with hoist. Inserts air bubbler into containers and starts agitator in freezing tank to ensure uniform freezing. Siphons or pumps water containing foreign matter from centres of partially-frozen ice blocks, using suction pump, and refills container with fresh water. Flushes surfaces of ice blocks with hose. Removes container from tank with hoist and immerses it in warm water to free ice from container sides. Positions containers on dumping pivot and pushes buttons to tilt pivot and dump ice onto platform. May mix brine solution for freezing tanks by adding prescribed amounts of materials into mixing vats and starting agitator. May turn valves to regulate compressors and condensers.

8299-154 SCREEN TENDER(any ind.) DPT:685
screenman.
GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends one or more vibrating or oscillating screens that separate powder or crushed materials according to size: Presses buttons to start screens vibrating. Turns valves and starts conveyors or moves chute vanes to control flow of materials to screens according to type of material to be processed. Sifts samples of sized material through laboratory test screens, hand sieve or splitter to determine if screened particles meet specifications. Changes screen mesh or cloths and adjusts equipment, using hand tools. Cleans screen holes clogged with oversized particles, using bar, rubber mallet or air hose. May scoop or shovel screened materials into bags or other containers. May examine materials to detect impurities that could contaminate product or damage screens. May prepare and stencil filled containers. May be designated according to material processed; for example, Aluminum-Powder-Screen Attendant(non-ferrous metal) Sand Grader(construction)

8299-158 MIXER-TENDER, BRUSH MATERIAL(misc. prod. fab., n.e.c.) DPT:685
blender, brush material.
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Tends machine that blends brush-filling materials, such as horsehair, nylon, vegetable fibres, and plastic filaments: Loosens wingnuts and adjusts conveyor guides to accommodate length of materials to be processed. Removes materials from container according to predetermined sequence and places them on machine conveyor with flag (split) ends together. Moves lever to set specified speed of machine cycle. Starts machine and observes material until blending conforms with prescribed standards. Removes and packs blended materials.

8299-162 CONVEYOR-WASHER TENDER(any ind.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends conveyor washer that cleans and rinses any of a variety of items, such as plate glass, plastic sheets, metal, cans and glassware, performing any combination of the following duties: Places items to be washed onto movable bed of machine. Turns valves and observes gauges to set specified flow of water or steam from jets of machine. Starts conveyor that moves objects into bath tank, through spray of water or steam, under rotating brushes and through spray of rinse water. Examines washed items and removes any remaining foreign matter, using brush or sponge. Weighs or measures and pours specified quantity of cleaning agent into wash water. Moves items to be washed to and from warehouse.

8299-166 WAXER-STACKER-MACHINE TENDER(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 2 EC: I 5 6 PA: M 4

Tends machine that sprays coating of lubricating wax on enamelled tinplate sheets and stacks waxed sheets on pallets: Adjusts machine guides according to size of tinplate sheets, using hand tools. Breaks blocks of wax, using mallet and loads pieces into electrically-heated-machine reservoir. Pushes button to start machine and observes operation to detect machine malfunction. Feels surface of waxed sheet, periodically, to verify quality and adjusts waxing mechanism as required. Starts stacker and roller units, to move stacked load from discharge end of machine. Places protective paper on top of completed stack and secures load to pallet with wire straps, using hand strapper. Cleans machine, using rags, solvent and scraper.

8299-170 WINDING-MACHINE TENDER(any ind.) DPT:685
roll-up-machine tender.
GED: 2 SVP: 2 EC: I PA: H 4 7

Tends winding machine that winds various materials on cores or spindles by performing any combination of the following duties: Positions core or spindle in winding machine, manually or using hoist. Pulls end of material through winder and secures onto core or spindle. Sets yardage counter, using hand tools. Depresses button to start machine and adjusts speed and tension controls to maintain even

winding. Examines material for imperfections during winding operation. Stops machine when specified yardage is indicated. Cuts material, using knife, and tapes end to prevent unwinding. Removes full core or spindle from machine, manually or uses hoist. Records information on work ticket.

May tend winding machine equipped with selvedge knives to cut specified width from edge of material. May roll particular product or material and be designated accordingly; for example,

Abrasive-Paper Winder(non-metal. min. prod., n.e.c.)

Floor-Covering Winder(linoleum prod.)

Gummed-Paper Winder(paper prod.)

**8299-199 MISCELLANEOUS PROCESSING
OCCUPATIONS**

This group includes processing workers, not elsewhere classified; for example, those who tend machines that crush, cut or cube ice. A typical example of an occupational title covered by this residual group definition is:

Ice-Cutting-Machine Tender(utilities, n.e.c.)

MACHINING AND RELATED OCCUPATIONS

This major group includes occupations concerned with using machines and hand tools to shape or work such materials as metal, plastic, wood, clay, glass or stone by cutting, boring, milling, abrading, planning, punching, pressing, rolling, engraving, welding or similar methods. These occupations are classified in the following minor groups:

- 831 Metal Machining Occupations
- 833 Metal Shaping and Forming Occupations,
Except Machining
- 835 Wood Machining Occupations
- 837 Clay, Glass, Stone and Related Materials
Machining Occupations
- 839 Other Machining and Related Occupations

831-METAL MACHINING OCCUPATIONS

This minor group includes occupations primarily concerned with shaping metal into parts or products of specified dimensions, by such means as turning, boring, milling, abrading or planing. Activities include: measuring, laying out and setting up work, operating machine-tools, and repairing, fitting and assembling parts. The machining of plastics or similar materials is also included when methods applied to machining of metal are used. These occupations are classified in the following unit groups:

- 8310 Foremen, Metal Machining Occupations
- 8311 Tool and Die-Making Occupations
- 8313 Machinist and Machine-Tool Setting-Up
Occupations
- 8315 Machine-Tool Operating Occupations
- 8316 Inspecting and Testing Occupations, Metal
Machining
- 8319 Metal-Machining Occupations, n.e.c.

**8310-FOREMEN, METAL MACHINING
OCCUPATIONS**

Foreman, Machine Shop, Maintenance
Foreman, Machine Shop, Production

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in shaping metal into parts or products by machining.

**8310-110 FOREMAN, MACHINE-TOOL
OPERATORS(mach., weld. & forg.) DPT:138**

Supervises and co-ordinates activities of machine-tool operators engaged in operating metal-cutting machines; such as, lathes, millers, shapers and grinders, which have been set up for repetitive type work, applying knowledge of machine-shop mathematics and procedures, machine-tool setup and operating techniques, and production machining methods, (Unit Group 8315):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May be concerned with particular type of activity and be designated accordingly; for example,

**8310-114 FOREMAN, MACHINISTS AND MACHINE-
TOOL SET-UP OCCUPATIONS(mach., weld. &
forg.) DPT:138**
machine-shop foreman; machinist foreman.

Supervises and co-ordinates activities of workers engaged in custom or production machining of metal workpieces, applying knowledge of machine shop mathematics and procedures, machine-tool setup and operating techniques, and production machining methods, (Unit Group 8313):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May set up and operate machine-tools to expedite production or solve machining problems. May be concerned with particular type of product and be designated accordingly; for example,
Foreman, Machine Shop, Automotive
Foreman, Machine Shop, Precision Instruments
Foreman, Machine Shop, Shipyard
Foreman, Machine Shop, Tool

8310-118 FOREMAN, METAL MACHINING, INSPECTION(mach., weld. & forg.) DPT:138
chief inspector; quality-control foreman.

Supervises and co-ordinates activities of workers engaged in inspecting materials, tools, workpieces and finished products; such as, metal stock, cutting tools, gauges, machine parts, and assembled units applying knowledge of specifications, production methods, products and inspection instruments, (Unit Group 8316):
 Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
 May compute relative production and repair costs to determine salvage value of rejected products.

8310-122 FOREMAN, TOOL AND DIE(mach., weld. & forg.; metal fab., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in laying out and setting up workpieces and machines, operating machine-tools, fitting and measuring to close tolerances, heat treating and assembling parts to make or repair dies, jigs, fixtures and tools, (Unit Group 8311):
 Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
 May be designated according to type of tools fabricated; for example, Forelady, Industrial Diamond Mounting(metal fab., n.e.c.)

8310-199 OTHER FOREMEN, METAL MACHINING OCCUPATIONS

This group includes metal-machining foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in machining moulds for glass and machining components for electrical equipment. Typical examples of occupational titles covered by this residual group definition are:
 Foreman, Machining and Assembling(electric. equip.)
 Foreman, Mould Shop(glass)

8311-TOOL-AND-DIE MAKING OCCUPATIONS

This unit group includes occupations concerned with making and repairing custom-made, prototype or special tools, dies, jigs, fixtures and gauges that require working to close tolerances. Activities include: laying out, making mathematical computations, reading mechanical drawings, setting-up workpieces and machines, operating machine-tools, heat treating parts, hand-fitting, and finishing work to specifications. Occupations concerned with the mass production of tools are classified in Unit Group 8315, MACHINE-TOOL OPERATING OCCUPATIONS.

8311-110 TOOL AND DIE MAKER(mach., weld. & forg.) DPT:280

GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Makes, repairs and tests dies, cutting tools, jigs, fixtures, gauges and special hand tools by laying out, setting up, machining, fitting and finishing metal stock and castings:
 Studies drawings and specifications of tool, die, prototype or model and visualizes product. Computes dimensions and tolerances and makes sketches. Plans sequence of operations by applying knowledge of tool and die construction, metal properties, machining methods and shop mathematics. Positions, secures, measures and marks metal stock or castings to lay out for machining, using lay-out tools and procedures. Sets up and operates variety of machine tools to cut, turn, mill, plane, bore, grind or otherwise shape workpiece to prescribed dimensions and finish. Verifies conformance of machined parts to specifications by checking dimensions, clearances and alignment, using measuring instruments; such as, dial indicators, height gauge, gauge blocks, surface gauge and micrometers. Fits and assembles parts, using hand tools; such as, files, scrapers, abrasive cloth, abrasive stones, grinders, hammers and wrenches. Tests completed tools, dies, jigs, or fixtures for proper operation. Dismantles and repairs worn or defective tools, dies and fixtures. Works to close tolerances.
 May design tools, templates and gauges used in tool and die making.

May heat-treat tools and dies, using electric, oil or gas-fired furnace, and oil or water-quenching baths. May specialize in making certain types of tools or dies and be designated accordingly; for example, Die-Casting-and-Plastic-Moulding-Die Maker
 Die Maker
 Die Sinker
 Tool Maker

8311-114 DIAMOND-TOOL MAKER(mach., weld. & forg.) DPT:281

industrial-diamond cutter and polisher.

GED: 4 SVP: 7 EC: I PA: L 4 7

Selects, cuts, shapes, polishes and mounts industrial diamonds to produce machine-tool cutters, saws and drill bits, utilizing knowledge of tool design and characteristics of industrial diamonds:
 Studies grade, quality and physical structure of rough diamonds. Sorts stones according to quality, size and faults, using magnifying glass and micrometers. Cuts stone to rough shape by positioning it in holder and holding against revolving saw or lapidary slitter impregnated with diamond dust. Grinds and polishes diamond to specified radii and angles, using lapping device. Examines stone for accuracy of angles, radii, clearances and cuts, using magnifying glass, optical comparator and microscope. Operates machine-shop tools to grind or machine recess in tool for diamond. Mounts diamond to specified angle in tool and applies brazing compound and flux. Operates electric furnace to fuse diamonds in tool holders and tool bits, in inert atmospheric conditions.

8311-118 DIE MAKER, BENCH, STAMPING(mach., weld. & forg.) DPT:281

stamping-die maker, bench.

GED: 4 SVP: 7 EC: I PA: M 4 7

Makes and repairs stamping dies by laying out, fitting and assembling castings and metal parts by analyzing specifications, using knowledge of shop mathematics, die construction and ductility of sheet metal:
 Studies drawings of die and product, die models, templates and prototype part, and visualizes shape, mechanical structure and operation of die. Computes dimensions, decides on machining to be done, and plans layout and assembly operations. Measures, marks and scribes metal stock for machining by machine-tool operators. Operates drill press to drill and tap holes in parts for assembly. Lifts machined parts manually or with hoist, and positions them for assembly on worktable or surface plate. Smooths flat and contoured surfaces and fits parts to each other, using tools, such as abrasive stones, files and power grinder. Verifies dimensions, alignments and clearances, using dial indicators, gauge blocks, thickness gauges and micrometers. Fastens parts together with dowels and bolts, using hand tools, such as hammers and wrenches. Fits and assembles cam-operated mechanisms for lateral movement of part of die. Works to close tolerances. Dismantles and repairs or replaces parts of dies.
 May specialize in making die units and transfer mechanisms for four-slide or multi-station-die presses and be designated accordingly; for example,
 Die Maker, Four-Slide Machine
 Progressive-Die Maker

8311-122 DIE MAKER, WIRE-DRAWING(mach., weld. & forg.) DPT:281

GED: 4 SVP: 7 EC: I 6 PA: M 4 7

Makes wire-drawing dies by laying out, setting up, machining and finishing metal, carbide and diamond parts:
 Studies specifications, drawings and charts and visualizes shape of die. Computes die dimensions and plans sequence of operations by applying knowledge of metal properties, machining methods and shop mathematics. Measures and marks metal stock to lay out workpiece for machining. Sets up and operates machine tools to cut, turn, mill, plane, bore, grind or otherwise shape workpiece to prescribed dimensions and finish. Polishes bores of die by lapping or using die-finishing machines, applying progressively finer grades of diamond dust compound. Inspects die for defects, such as cracks, using loupe or microscope. Pulls wire or rod through die bore manually or using wire-drawing machine to test die performance. Measures wire or rod with such instruments as micrometer, vernier gauge or wire gauge to verify conformance of die bore to specifications.

8311-126 DIE SINKER, BENCH(mach., weld. & forg.) DPT:281

forging-die maker.

GED: 4 SVP: 7 EC: I PA: M 4 7

Lays out and finishes impression cavities in die blocks to produce forging dies:

Studies drawing of part or die and plans sequence of operations, applying knowledge of die sinking. Measures and marks die block to lay out designs of cavities, using calipers, micrometers and gauges. Uses power grinder, scrapers, files, and abrasive cloth to obtain specified dimensions, contours and finish of die cavities. Inspects die cavities with templates and measuring instruments, such as calipers, micrometers and height gauges to verify conformance to specifications. Makes templates to verify dimensions of cavities. Makes and inspects sample lead or non-metal cast of part in die to verify fit of die members and basic shape of part.

8311-130 TOOL MAKER, BENCH(mach., weld. & forg.) DPT:281

GED: 4 SVP: 7 EC: I PA: M 4 7

Makes and repairs cutting tools, jigs, fixtures and gauges by laying out, fitting and assembling parts:

Studies drawings and other specifications to determine dimensions, machining involved and to plan layout and assembly procedures, using knowledge of tool design and shop mathematics. Measures, marks and scribes metal stock to lay-out for machining by other workers. Operates drill press to drill and tap holes at specific locations in parts. Smooths and scrapes parts to fit, using hand tools, such as files and scrapers. Grinds surfaces of parts, using surface grinder. Positions and secures parts on surface plates with devices, such as V-blocks, vises and angle plates. Assembles parts, using hand tools, such as wrenches, hammers and tweezers. Verifies dimensions and alignments, using measuring instruments, such as micrometers, height gauges and gauge blocks.

May operate assembled mechanism to test its functioning.

8311-134 CARBIDE-TOOL MAKER(mach., weld. & forg.) DPT:380

tool maker, carbide.

GED: 4 SVP: 7 EC: I 6 PA: L 4 7

Sets up and operates variety of machine-tools to make tools, dies, tool holders and machine parts from tungsten-carbide blanks and steel:

Sets up and operates machine-tools, such as lathes, milling machines, grinders, shapers and electrical-discharge machines, to make tools and other parts. Measures workpieces with precision-plug and block gauges, micrometer, optical comparator and other measuring instruments, to ensure conformance to specifications. Brazes carbide tips to tools, using hand torch or induction heater.

8311-138 DIE FINISHER(mach., weld. & forg.) DPT:381
die barber; die fitter.

GED: 4 SVP: 7 EC: I 5 PA: M 3 4 7

Grinds, files and polishes contoured surfaces of metalworking dies, such as forging dies and stamping dies, to specified shape and smoothness, using abrading tools and hand tools:

Selects abrasive tools according to shape and smoothness specified. Lifts and positions die on bench, manually or with hoist. Studies drawings, die models and prototype part, and compares them with die, to ascertain contours. Brushes blue pigment on ridged and grooved surface of rough-milled die and grinds down ridges with portable grinder. Brushes contrasting pigments on die and prototype part, die model, or corresponding die and presses them together, manually or with press. Interprets pattern of pigments where surfaces have made contact and grinds and files high spots until die conforms to specified shape. Polishes and smooths die surfaces, using a variety of files, stones, abrasive cloths and papers.

May be designated according to type of die finished; for example,

Forging-Die Finisher
Punch Finisher
Stamping-Die Finisher

8311-142 DIE MAKER, JEWELLERY(metal fab., n.e.c.) DPT:381

GED: 4 SVP: 6 EC: I PA: M 4 7

Makes set of dies used to form and shape metal jewellery blanks: Studies drawing or sample of product and plans sequence of operations. Draws outline of design on flat surface of steel block. Positions block in vise and cuts design, using fine chisels. Chips and cuts away excess metal to complete design of die, using machine-tools and hand tools. Verifies dimensions of workpiece, using micrometers and gauges. Hardens and tempers steel block and forces it into block of soft steel to form sunken design in other half of die, using press.

8311-146 EXTRUSION-DIE-TEMPLATE MAKER(mach., weld. & forg.) DPT:381

GED: 4 SVP: 6 EC: I 6 PA: L 4 7

Lays out sheet or plate steel workpiece and operates machine-tools to make templates of extrusion cross-sections, used in designing and manufacturing extrusion dies:

Studies template or product drawings and plans operations according to knowledge of shop mathematics and extrusion methods. Applies copper sulphate, chalk or other material used for marking surface of metal with cloth or brush. Computes dimensions, measures and scribes outline of extrusion cross-section on metal workpiece. Shapes and smooths workpiece by sawing, filing, machining and drilling, following lay-out lines and using hand and machine-tools. Verifies conformance of template to specifications, using measuring instruments, such as micrometers, calipers, height gauges and protractors. Operates bench grinder to modify standard files to particular shapes for special uses.

May make template from conductive alloy and use spark-eroding machine for shaping template.

8311-150 WIRE-DIE POLISHER(wire prod.) DPT:381
carbaloid-die polisher; diamond-die polisher.

GED: 3 SVP: 5 EC: I PA: L 4 7

Laps and polishes bores of carbaloid and diamond wire-drawing dies to specified dimensions:

Positions die in holding device of machine. Inserts steel needle in machine holder or spindle, positions needle inside bore of die and starts machine that rotates die or needle. Dabs progressively finer diamond-dust paste or solution on needle during lapping operation. Removes and cleans die, using compressed air or ultrasonic cleaner. Verifies die bore dimensions and angles by pulling specified gauge wire through die opening and measuring it with micrometer, or by taking latex rubber impressions, and measuring it with optical comparator. Inspects die for cracks or other defects, using magnifying glass or microscope. Cleans other die surfaces with files or grinders. Replaces worn needles and sharpens points on grinder.

May lap dies by inserting and pressing hand-lapping tool in bore of rotating die in bench or jewellers' lathe.

8313-MACHINIST AND MACHINE-TOOL SETTING-UP OCCUPATIONS

This unit group includes occupations concerned with setting up and operating various machine-tools to shape metal into parts or products of specified dimensions requiring work to close tolerances. Activities include: measuring, laying out and setting up workpieces; making mathematical computations and reading mechanical drawings; machining work to specifications by boring, milling, turning, sawing, precision grinding, and planing; and associated fitting, assembling and repairing of metal parts; setting up machine-tools for less skilled operators to perform repetitive work and checking samples of first-run workpieces; and machining of other materials when methods applied to metal machining are used. Occupations concerned with operating metal-cutting machines, set up for repetitive type work, are classified in Unit Group 8315, MACHINE-TOOL OPERATING OCCUPATIONS.

8313-110 MACHINIST, EXPERIMENTAL(mach., weld. & forg.) DPT:280
research machinist.
GED: 4 SVP: 8 EC: I 6 PA: M 4 7

Makes parts, tools, mechanisms and machines for experimental purposes:
Performs duties similar to those of 8313-154 MACHINIST, GENERAL (mach., weld. & forg.). Specializes in solving problems relative to work-holding arrangements, materials, machine settings, tools, product specifications and fabrication methods for production process. Varies factors systematically and verifies results by such methods as operating mechanisms, timing operations, measuring tool wear, inspecting products and discussing results with engineering personnel.

8313-114 PATTERNMAKER, METAL(mach., weld. & forg.) DPT:280
GED: 4 SVP: 8 EC: I 6 PA: M 4 7

Analyzes specifications, and applies knowledge of pattern-making methods to lay out, machine, fit and assemble castings and other parts, to make metal-foundry patterns, core boxes and match plates, using machine-tools and hand tools:
Studies drawings and other specifications of part to be cast, computes dimensions and plans sequence of operations. Measures and marks metal workpiece for machining. Sets up and operates various machine tools, such as milling machines, lathes, drill presses and grinders to machine castings to specifications. Assembles pattern, using hand tools and dowels, bolts, screws or other fasteners. Cleans and hand finishes workpiece, using files, scrapers and powered hand grinders. Verifies conformance of pattern dimensions to specifications, using templates and measuring instruments, such as scale, calipers and micrometers. May make templates for layout and inspection purposes.

8313-118 TURBINE-BLADE FITTER(mach., weld. & forg.) DPT:280
GED: 4 SVP: 8 EC: I 5 6 PA: M 4 7

Sets up and operates machine-tools to make and fit blade structures for steam and gas turbines:
Positions turbine blades on bench preparatory to forming sections. Measures tenon location on blades with dial indicator and selects two blades with equal tenons for end blades in section. Sets up and operates milling machines and grinding machines to mill and grind blade roots to obtain specific section lengths, radial alignment and root contact. Inserts blades into grooves of spindle, cylinder or fixture and pounds metal caulking into groove to tighten blades. Operates grinders and metal saw to shape blade locking device, spindle filler pieces and wedges from metal stock. Fits locking devices to pocket of blades and smooths surfaces, using chalk, files and abrasive paper. Drills, reams and taps cylinder locks, spindle filler pieces, seals and wedges, using drill press and fastens them to blade by peening or inserting set screw. Fits shroud over blade ends and peens rivets, using hammer and capping tool or pneumatic hammer. Checks head of rivet for specified clearance, using measuring tool. Grinds shroud end of each blade section to obtain specified clearance between shrouds.

8313-122 MACHINIST, BALLISTICS LABORATORY(mach., weld. & forg.) DPT:260
GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates a variety of machine-tools to make ballistics laboratory equipment such as gun-holding and bench-rest devices, and cartridge-slicing fixtures, used for testing accuracy of ammunition:
Performs duties similar to those of 8313-154 MACHINIST, GENERAL (mach., weld. & forg.). Specializes in developing and machining ballistics-laboratory testing devices. Assembles devices by bolting, pinning, rivetting or welding. Tests accuracy of gun-holding devices and rim-fire and centre-fire cartridges by firing at target. Inspects target for bullet hole group size and mean point of impact to determine accuracy of gun-holding devices and ammunition. Provides advice on design and development of ballistics testing equipment and special test barrels, utilizing knowledge of firearms, ammunition and mechanical principles.

8313-126 MACHINIST, MODEL MAKER(mach., weld. & forg.) DPT:260
model maker; prototype machinist.
GED: 4 SVP: 7 EC: I 6 PA: M 4 7

Sets up and operates a variety of machine-tools to make or repair prototype models of precision equipment, following drawings and sketches or from oral instructions:
Performs duties similar to those of 8313-154 MACHINIST, GENERAL (mach., weld. & forg.). Specializes in making, repairing and assembling prototype models of precision equipment such as tool attachments, mechanical test equipment, control instruments and data processing mechanisms. Discusses dimensional and technical problems with design staff and makes drawings or sketches of proposed mechanisms.

8313-130 PINION-AND-WHEEL-CUTTING, SET-UP
MAN(scient. & ind. equip., n.e.c.) DPT:260
GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates variety of machining equipment used to mass produce precision watch parts, such as wheels, pinions, clicks and screws, following drawings and sketches:
Sets up machine-tools, such as gear hobbers and lathes for production-machine operators and makes first-run workpiece. Adjusts cutting speeds, feed rates, and depth of cut. Grinds and resets precision cutters. Installs, adjusts and makes repairs to cutting tools, cams, gears, chucks, slides and similar parts of production machines. Instructs new operators in machine operation.

8313-134 GRINDER SET-UP OPERATOR, JIG(mach., weld. & forg.) DPT:280
jig grinder.
GED: 4 SVP: 7 EC: I 6 PA: L 4 7

Sets up and operates jig-grinding machine to locate and precision-grind holes and contours in metal workpieces, such as tool, die and machine parts, according to specifications, and using knowledge of tooling and jig grinding procedures:
Examines drawing, layout on workpiece, or other specifications to plan sequence of operations. Computes and sketches hole and contour dimensions and locations in relation to base reference points and lines. Positions and secures workpiece on machine table in relation to grinding spindle, verifying each step with dial indicator. Selects grinding wheel, grinding speeds and feed rates for each operation according to knowledge of metal properties and abrasives and mounts wheel on spindle. Moves controls and reads dials to set grinding speed, feed rate, spindle angle for taper grinding, diameter of planetary action, and limits of automatic reciprocating wheel-feed. Dresses wheel manually or with preset dressing device. Moves controls to feed wheel into hole and against surface of workpiece. Verifies hole locations and dimensions for conformance to specifications, using measuring instruments, such as dial indicator, gauge blocks and telescoping gauges.

8313-138 INSTRUMENT MAKER(mach., weld. & forg.) DPT:280
precision-mechanical-instrument maker.
GED: 4 SVP: 7 EC: I 6 PA: L 4 7

Sets up and operates machine-tools to make, modify and repair mechanical instruments and mechanical assemblies or parts of electrical or optical instruments, such as pressure gauges, binoculars, theodolites, actuating devices, pyrostats and servo-mechanisms:
Reads workorders and parts lists, and analyzes schematic and dimensional drawings and written specifications for job data. Lays out cutting lines and reference points on workpiece material such as silver, nickel, stainless steel, platinum, steel, ivory and plastic, using measuring and marking instruments. Cuts, shapes and fits or reworks parts and fittings, using machine-tools such as bench lathe, drill press, punch press, milling machine, grinder, and lapping and polishing machines. Heat treats metal parts by annealing and hardening. Assembles parts in jig, fixture or clamps, and welds, solders or brazes parts together. Fits and installs components such as bearings, bushings, springs, balance mechanisms and gear trains in housings, using small arbor press and hand tools. Verifies dimensions of parts, using measuring instruments such as micrometers, calipers and electronic gauges. Coats assembled instruments with protective lacquer

or enamel, using spray-gun. Lubricates moving parts to specifications during assembly.

8313-142 MACHINE-TOOL SETTER(mach., weld. & forg.) DPT:280

set-up man, machine-tools.

GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up various machine-tools for use on a production basis by machine operators:

Studies drawings and other specifications and determines sequence of machining operations to be carried out, using knowledge of particular machine's operation. Measures and marks reference points on workpiece. Positions and fastens cutting tool(s) and workpiece on machine, using chucks, face plate, centers, clamps or other fixtures. Adjusts machine travel, stops and other controls to ensure machine cuts or grinds to specifications, and sets cutting speed, feed rates and depth of cut. Starts and operates machine to make sample workpiece. Checks sample with measuring instruments such as micrometers, calipers and preset gauges, and makes adjustments to machine settings. Changes worn tools and resets machine. Instructs machine operators.

May specialize in setting up one particular type of machine and be designated accordingly; for example,

Grinder Set-Up Man

Honing-Machine Set-Up Man

Lathe Set-Up Man

Milling-Machine Set-Up Man

Screw-Machine Set-Up Man, Production

Threading-Machine Set-Up Man

8313-146 MACHINE-TOOL SET-UP OPERATOR(mach., weld. & forg.) DPT:280 machine set-up operator; setter-operator, machine-tool.

GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates variety of machine tools, such as lathes, millers, shapers, grinders and drill presses to machine metal into parts or products usually on custom basis:

Analyzes specifications, drawings and shape of workpiece to determine tooling and machining requirements and sequence of operations, applying knowledge of metal properties, machining methods and shop mathematics. Lifts workpiece manually or with hoist, positions and secures it to machine table, chuck, face plate, centers or holding fixture, using wrenches and aids such as shims, parallel blocks, gauges and clamps. Verifies accuracy of workpiece position with instruments, such as surface and height gauges and dial indicator. Selects and sets feed rate, cutting speed, depth of cut and type of cutting tool for each machining operation, according to knowledge of metal properties, and size and shape of workpiece. Starts machine, turns handwheels to feed tool and workpiece together and engages automatic feeding device. Turns valve handle and directs flow of coolant or cutting oil against tool and workpiece. Observes operation and regulates tool position and action. Verifies dimensions of machined workpiece to specifications, using instruments, such as micrometers, gauges and gauge blocks. Operates bench or cutter grinding machines to shape and sharpen cutting tools.

May machine non-metallic materials. May set up and operate equipment such as welding machines and flame-cutting equipment. May measure, mark and scribe dimensions and reference points on workpiece to lay out for machining. May have specialized experience with particular operation, material, product, or type of machine and be designated accordingly.

8313-150 MACHINIST, AUTOMOTIVE(mach., weld. & forg.) DPT:280

GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates variety of general and specialized machine- tools such as lathes, valve grinders, and piston grinding and turning machines to repair automotive engines and parts:

Performs duties similar to those of 8313-154 MACHINIST, GENERAL (mach., weld. & forg.). Specializes in machining automotive parts. Operates lathe to machine water-pump castings, pistons, valves and other automotive parts. Clamps piston in carriage of piston grinding and turning machine to grind piston to specified dimensions. Adjusts grinding wheel to make specified depth of cut. Clamps valve stem in chuck of valve grinder and grinds seating

surfaces of valves, moving levers to obtain required depth of cut. Verifies dimensions to adhere to tolerance specifications, using micrometers, height gauges and other measuring instruments.

8313-154 MACHINIST, GENERAL(mach., weld. & forg.) DPT:280

machinist, all-round; machinist, fitter; machinist precision.

GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates various machine-tools, such as lathes, millers, shapers and grinders, and fits and assembles parts to make or repair mechanisms, tools or machines, applying knowledge of mechanics, shop mathematics, metal properties, lay-out and machining procedures:

Studies specifications and drawings or sample parts and plans sequence of operations. Computes dimensions and tolerances and prepares working sketches from general descriptions and by examining parts and their mating surfaces. Measures, marks and scribes center lines, dimensions and reference points on workpiece, using measuring and marking instruments, to lay out workpiece for machining. Positions workpiece in machine by securing it onto machine table or fixture, into chuck or collet or between centers, manually or using hoist, dial indicator, shims, parallel blocks or clamps. Selects and installs cutting tools in machines. Sets controls and gears to facilitate indexing of workpiece, cutting speed and depth of cut according to type of materials. Starts machine and observes machining progress, and frequently verifies conformance of part to specifications, using measuring instruments; such as, scales, calipers, micrometers and fixed gauges. Finishes and fits parts to mechanisms by filing, grinding, scraping and polishing. Verifies dimensions and alignment, using instruments; such as, micrometers, height gauges, surface plate and gauge blocks.

May operate assembled or repaired mechanism to test performance.

8313-158 MACHINIST, MOTION-PICTURE EQUIPMENT(mach., weld. & forg.) DPT:280

GED: 4 SVP: 7 EC: I 6 PA: L 4 6 7

Sets up and operates machine-shop equipment to make, remodel and repair mechanical parts of photographing, projecting, editing, sound recording, printing and processing equipment used for motion picture production:

Performs duties similar to those of 8313-154 MACHINIST, GENERAL (mach., weld. & forg.). Specializes in machining and fitting parts for motion-picture equipment. Observes equipment operation and listens for sounds indicating defects and applies tests, using special equipment. Dismantles machines, using hand tools. Makes or repairs parts or mechanisms, using machine-tools such as bench lathe, milling machine, gear cutting machines, shaper, grinder and drill press. Verifies dimensions of parts using calipers, micrometers, height gauges, fixed gauges, optical comparator and other measuring instruments. Fits and installs parts, and adjusts and operates repaired or modified machine to verify correct functioning.

8313-162 MAINTENANCE MACHINIST(mach., weld. & forg.) DPT:280

GED: 4 SVP: 7 EC: I 5 6 PA: M 4 6 7

Sets up and operates machine-tools to repair or make parts for production machinery, and installs parts to correct malfunctions:

Performs duties similar to those of 8313-154 MACHINIST, GENERAL (mach., weld. & forg.). Observes and listens to production machines in operation to locate defects. Dismantles machine, using hand tools such as wrenches and screwdrivers and examines parts for defects or wear, using precision gauges, such as micrometers, feeler gauges and dial indicator. Assembles and starts machine to ensure correct operation.

May make fixtures and jigs. May heat treat replacement parts by hardening or tempering.

8313-166 SAMPLE MAKER, HOUSEHOLD
APPLIANCES(electric. equip.; mach., weld. & forg.)
 DPT:280

GED: 4 SVP: 7 EC: I 6 PA: L 4 5 7

Constructs working models of new or redesigned electrical household appliances such as fans, heaters and hairdriers, using machine-tools, sheet-metalworking machines, and hand and power tools:

Performs duties similar to those of 8313-154 MACHINIST, GENERAL (mach., weld. & forg.). Specializes in making metal and plastic parts for prototype models of electrical household appliances. Devises and constructs special tools, dies, moulds, jigs and fixtures, and modifies existing tools and equipment. Designs and forms metal shells and frames following sketches and oral suggestions. Modifies existing motors, switches and other equipment to be incorporated in re-styled appliances by shaping or forming new parts or adapters. Assembles mechanical and electrical parts and installs wiring circuits, using hand and power tools and soldering iron, riveter and spot welder. Submits completed prototype for approval.

May paint assembled prototype appliances, using pressure-spray cans. May measure temperature of appliance components, such as motors and frames, with temperature probes.

8313-170 JIG BORER, TAPE-CONTROL(mach., weld. & forg.)
 DPT:280
tape-controlled jig-boring-machine operator.
 GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates vertical or horizontal numerically-controlled, single-spindle, jig-boring machine to face, drill, bore, ream or tap metal castings and brackets, applying knowledge of properties of metals and machining methods:

Studies drawings or tooling instructions to determine machining sequence and methods. Positions holding fixture and workpiece in machine and secures in place, using wrenches. Loads tape in reader and starts machine to automatically position indexing table, using predetermined code punched in tape. Pushes button to zero indexing table and console at established reference point. Installs and positions cutting tool at predetermined distance from workpiece and adjusts tool compensation on console for particular tool. Inspects each cut on first run workpiece and adjusts console controls to reset cutting tool to achieve desired concentricity, boring tolerances, spatial relationships and surface-finish quality. Verifies dimensions of holes, using specified gauges.

May operate jig borer on manual, semi-automatic or automatic control, as required. May grind cutting tools.

8313-174 ROTARY-HEAD-MILLING-MACHINE SET-UP
OPERATOR(mach., weld. & forg.)
 DPT:280
milling-machine operator, rotary head.
 GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates vertical-milling machine with spindle mounted on rotary head to mill complex shapes such as arcs and tangents on metal workpieces:

Studies drawing or layout on workpiece to visualize machining requirements and to plan sequence of operations. Positions work on machine table, using devices such as parallel bars, shims, vee blocks, angle plate and planer gauges, and secures work with bolts and clamps. Selects and sets feed rate, cutting speed, depth of cut, and mounts milling cutter, applying knowledge of metal properties and shop mathematics. Verifies alignment, using devices such as dial indicator and thickness gauges. Turns handwheel to feed workpiece to cutter and engages feed. Computes dimensions of shapes to be milled and successive positions of cutter in relation to rotary head, using knowledge of trigonometry. Moves controls to position and move cutter or table in computed directions to mill specified shapes. Verifies conformance of milled workpiece to specifications, using measuring instruments such as micrometers, gauge blocks and comparator. Opens valve and directs flow of coolant against cutter and workpiece. Computes indexing ratios and sets up and operates dividing head to index workpiece for gear-tooth cutting operation. Mounts different tool attachments in place of cutter to perform other machining operations such as boring and drilling.

May be designated according to particular operation, product, or type of machine used.

8313-178 LAY-OUT MAN, MACHINE SHOP(mach., weld. & forg.)
 DPT:281

GED: 4 SVP: 7 EC: I PA: M 4 7

Lays out lines and reference points on metal stock or workpieces, such as bars, castings, plates or machine parts, to indicate location and dimensions of machining to be done:

Studies drawings and other specifications and plans layout. Examines workpiece, establishes reference points on surfaces, and computes lay-out dimensions, using measuring instruments, such as scales, squares, straightedge and compass. Positions workpiece on surface plate or work table, using work aids, such as shims, parallel blocks and angle plates. Verifies position with instruments, such as gauge blocks, height gauges and dial indicators. Indents reference points with small center punch and hammer, and marks lay-out lines, using surface gauge, straightedge, compass, templates and scribe. Sets indicators on height gauge, protractor or lay-out machine to computed dimensions, or transfers dimensions from specified locations on model to corresponding locations on workpiece. Coats metal surfaces being used for marking, with chalk, paint, copper sulphate, lay-out blue or similar material prior to marking. Marks data, such as dimensions, instructions and part identification on workpiece.

May be designated according to particular product, or workpiece.

8313-182 GEAR-CUTTING MACHINE SET-UP
OPERATOR(mach., weld. & forg.)
 DPT:480
gear cutter; gear shaper.
 GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates variety of gear-cutting machines, such as gear-shapers, hobbors and generators to machine splines or gear teeth on metal blanks:

Studies drawings, job orders, standard charts and other specifications. Computes dimensions, number of teeth and machine settings, according to gear type, applying knowledge of shop mathematics and gear design, visualizing machining required and planning sequence of operations. Reads tooling instructions for machine settings, equipment and cutters to be used. Positions and secures workpiece to cutting angle on arbor, in chuck or other holding device, using wrenches. Selects and secures cutters in toolhead, in spindle or on arbor. Selects and mounts gears, cams or templates, or moves levers to set feed rates and rotation speeds of cutters and workpiece in relation to each other. Selects and mounts guides to impart twisting motion to spindle for cutting helical gears. Sets cutting speeds and depth of stroke and cut for reciprocating cutters. Starts machine, turns valve handle and directs flow of coolant against cutter and workpiece. Verifies conformance of machined gear to specifications, using gear measuring wires, involute (curve) checker, master gears, optical comparator (shadow graph) and other special gear inspection equipment.

May machine plastic or other non-metallic materials. May set up and operate other machine-tools.

8313-186 BORING-MILL SET-UP OPERATOR,
HORIZONTAL(mach., weld. & forg.)
 DPT:280
horizontal-boring-mill set-up operator.
 GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates horizontal-boring machine to drill, bore and mill metal parts according to specifications and knowledge of machining procedures:

Studies drawing or layout to determine dimensions, tolerances, location of base reference lines and to visualize machining required. Examines workpiece, selects workholding arrangement and plans sequence of machining operations. Positions and secures workpiece to table or angle plate, using clamps, shims, parallel blocks and bolts, and verifies alignment of workpiece with center of spindle. Selects and mounts cutting tool in spindle or boring bar. Moves controls to set feeds, speeds and depth of cut, and to position tool and workpiece in relation to each other. Starts machine and observes operation, making one or more trial passes with manual control before engaging feed. Verifies dimensions of machined workpiece, using measuring instruments such as micrometers, telescoping gauges, calipers, fixed gauges and dial indicators.

May operate bench grinder to sharpen boring-mill cutting tools. May operate boring mill with automatic-positioning controls.

8313-190 BORING-MILL SET-UP OPERATOR, VERTICAL(mach., weld. & forg.) DPT:280
vertical-boring-mill set-up operator.
 GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates vertical boring machine to drill, bore, turn, ream, tap and face metal workpieces according to specifications and knowledge of tooling and jig-boring procedures: Studies drawings and job order to plan sequence of operations. Lays out reference lines and location of holes on workpiece, using lay-out tools, such as scribes, dividers, center punch and hammer, and applying knowledge of shop mathematics. Positions and secures workpiece on machine table, checking alignment so that workpiece is concentric with center of rotation, and surface is parallel to table. Starts machine and verifies true-setting, using dial or other indicator. Selects and sets cutting speeds, feed rates, depth of cut, and cutting tool, according to knowledge of metal properties. Sharpens, installs, and secures cutting tools in spindle. Turns handwheels to lower tool to workpiece and engages automatic feed. Turns valve handle and directs flow of coolant or cutting oil over cutting area. Verifies machined workpiece to dimensional specifications, using measuring instruments, such as fixed gauges, telescoping gauges, calipers and micrometers. May be designated according to type of boring machine operated; for example, Jig Borer

8313-194 CHUCKING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:280
 GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more single or multiple-spindle horizontal chucking machines (lathes) to perform series of machining operations, such as turning, boring, threading and facing on metal workpieces: Analyzes drawings or job order for specifications, dimensions and tolerances and tooling instructions, such as cutting speeds, feed rates, work-holding devices and cutting tools. Attaches specified chuck to headstock, using wrenches. Positions and tightens tools in holders. Moves controls, cams and stops to set rotation speed and feed rates, and to control tool and workpiece movement for various operations. Lifts workpiece manually or with hoist and positions and secures it in chuck. Turns handwheels to bring tool in position to start cut. Turns valve control to direct flow of coolant against tool and workpiece. Starts lathe and moves controls to manoeuvre tools during machining operations. Checks dimensions of machined workpiece to specifications, using micrometers, calipers and fixed gauges. Determines station and timing of each operation to assure efficient use of tools and time. May set automatic device to feed workpieces to machine. May compute data such as, dimensions, rotation speeds and feed rates, using knowledge of shop mathematics, shop practices and metal properties. May be designated according to product or type of machine being used.

8313-198 CHUCKING-MACHINE SET-UP OPERATOR, MULTIPLE-SPINDLE, VERTICAL(mach., weld. & forg.) DPT:280
multi-station-vertical-chucking-lathe operator.
 GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more multiple-spindle vertical-chucking machines (lathes) to perform series of machining operations, such as turning, boring, threading and facing of castings, forgings, weldments or other metal workpieces: Studies drawings, job order, standard charts or specifications for dimensions and tolerances, and tooling instructions for holding devices, cutting speeds, feed rates and cutting tools. Visualizes movements of machine parts, workpieces and tools for each operation in relation to others, and determines station and timing of each operation. Installs specified chucks or holding fixtures on headstocks, and places and secures workpieces in holding devices. Positions and secures cutting tools and toolholders in machine, using wrenches. Moves controls, stops and cams to set rotation speeds and feed rates, and to control timing and action of tools at each station. Starts machine, opens valve and directs flow of coolant against tools and workpieces. Stops machine and verifies conformance of first run workpieces to specifications, using fixed gauges, calipers, depth gauges, verniers or micrometers. May machine non-metallic materials such as plastics. May be

designated according to material or product machined or size, type or trade name of machine used; for example, Bullard Multiple-Spindle Operator Heavy-Chucking-Machine Operator

8313-202 DRILL-PRESS SET-UP OPERATOR, MULTIPLE-SPINDLE(mach., weld. & forg.) DPT:280
gang-drill-press set-up operator.
 GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates multiple-spindle drilling machine to perform, simultaneously or in sequence, machining operations; such as, drilling, reaming, countersinking, spot-facing and tapping of holes in metal workpieces: Studies drawings or job order for specifications, such as hole locations and dimensions, and tooling instructions, for jigs, fixtures, feed rates, cutting speeds and cutting tools. Places workpiece in fixture or on machine table, and secures it with clamps. Installs cutting tools in spindles. Positions and fastens specified drilling jig, and moves controls to position spindles and align tools with guide bushings in jig. Sets stops to control depth of holes. Moves controls to set cutting speeds and feed rates, and regulate flow of coolant. Engages power feed and observes machine operation. Periodically verifies conformance of machined work to specifications, using measuring instruments, such as calipers, micrometers and fixed gauges. May drill plastics or other non-metallic materials. May tilt table or spindles to machine holes at specified angles. May be designated according to product, operation, or type of machine operated.

8313-206 DRILL-PRESS SET-UP OPERATOR, TAPE-CONTROL(mach., weld. & forg.) DPT:280
numerical-control-drilling-machine operator; tape-controlled-drill-press operator.
 GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates tape-controlled, turret-type or single-spindle drill press that is programmed to automatically position indexing table, change tools and perform machining operations, such as drilling, reaming and tapping metal workpieces: Studies instructions and drawings or process sheets to determine set-up and operating requirements. Selects specified tools, and workpiece holders, such as blocks, risers and clamps. Loads one or several workpieces, tooling, and fixtures in location and orientation specified on process sheets, and fastens with bolts. Sets switches and dials on numerical control panels according to process sheet instructions. Threads end of control tape into read-head of console, and presses switches to set machine and tape to start point and initiate machining cycles. Turns switch to select block-stop mode when using unproven tape, and verifies conformance to tolerances by comparing numerical displays with process sheet and drawing data, and by making measurements with scales, gauges and micrometers. Adjusts tooling in machine or tool setting gauges, and trims controls before initiating finish cuts. Removes and replaces initial workpiece at end of machining cycle. Turns selector switch to full automatic position, to permit machining of remaining production run without operator intervention. Monitors automatic operation to detect errors, remove chip accumulation, adjust coolant flow, and replace worn or damaged tools. Shuts down machine in event of machine error or malfunction. Deburs and spot-checks finished parts during tape-controlled machining cycles. Operates drill press in semi-automatic mode by setting selector switch and manually dialing in data according to oral or written instruction, to machine relatively simple pieces for which a tape has not been prepared, or to make changes in a standard-part. May operate two or more machines simultaneously when using proven tapes. May be designated according to type of drilling machine operated.

8313-210 ELECTRICAL-DISCHARGE-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:280
 GED: 4 SVP: 6 EC: I 6 PA: L 4 7

Sets up and operates one or more electrical-discharge machines to shape metal workpieces to specifications: Studies drawing of product, and plans shaping operations, using standard charts and manuals. Computes settings from specifications, utilizing knowledge of electrical-discharge-machining processes, metal properties and shop mathematics. Positions and secures workpiece on machine table with clamps, vise or fixture. Positions and secures electrode in holder on surface plate to verify concentricity and depth,

using measuring instruments such as calipers and dial indicators. Mounts electrode and holder on machine spindle, checking alignment of electrode and workpiece with measuring instruments. Positions gauge blocks, dial indicator and spindle stop on machine so that descending electrode will stop at specified depth when indicator feeler point touches gauge blocks. Turns valve handle to adjust flow of dielectric coolant over electrode and workpiece, or to immerse them in circulating bath. Reads charts to ascertain settings such as electric current and electrode feed rate, and sets controls. Starts machine and observes beginning of operation. Moves controls to rotate electrode or workpiece. Inspects completed workpiece visually and with templates and measuring devices.

8313-214 ENGINE-LATHE SET-UP OPERATOR(mach., weld. & forg.) DPT:280
lathe hand.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates engine lathe to perform machining operations, such as turning, boring, facing and threading on metal or nonmetallic workpieces:

Studies drawing, job order or layout on workpiece to visualize machining to be done, plan sequence of operations, and for specifications, such as dimensions, tolerances and special tooling instructions. Lifts workpiece manually or with hoist and positions and secures it on faceplate, in chuck or between centers, using clamps and wrenches. Verifies position with measuring instruments, such as calipers, height gauge and dial indicator. Selects and sets feed rate, cutting speed, depth of cut and cutting tool for each operation according to type of metal. Positions and secures cutting tool in relation to workpiece. Starts machine and turns handwheels to feed tool to workpiece and engages feed. Turns valve handle and directs flow of coolant against workpiece and tool. Verifies dimensions of workpiece to specifications, using micrometers, scale, calipers and depth and fixed gauges. Computes data, such as dimensions, tapers, speeds, and tool settings, using knowledge of metal properties and shop mathematics. Sets up and operates relieving or tracing attachments that guide cutting tools to duplicate contours from templates or models. Sets up lathe to machine tapers by offsetting tail stock, using taper attachment on carriage or by setting compound rest at specific angle. Mounts gears or moves levers, and engages threading dial to machine threads to specific pitches and shapes. Operates bench or pedestal grinder to shape and sharpen cutting tools. Cleans and lubricates lathe, using brush, air hose and oil can.

May be designated according to material machined, product, or type of lathe used; for example,
Engine-Lathe Set-Up Operator, Tool
Precision-Lathe Operator

8313-218 GRINDER SET-UP OPERATOR, PRECISION(mach., weld. & forg.) DPT:280
precision grinder, set-up operator.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more types of grinding machines, such as external, internal, surface or universal grinding machines to grind machine parts, dies, tools or other metal workpieces utilizing knowledge of precision grinding procedures:

Studies mechanical drawings and specifications or layout of workpiece to determine dimensions and tolerances of part to be made, tooling required, and to plan sequence of operations. Selects method of holding workpiece. Lifts workpiece manually or with hoist and positions and secures workpiece to holding device, using wrenches and clamps or magnetic chuck. Selects feed rates, grinding speeds and grinding wheel of size, shape and grade for each operation, applying knowledge of metal properties and abrasives. Mounts and secures grinding wheel on spindle, using wrench. Dresses grinding wheels to plain or complex profiles, using special fixtures and tools. Positions and secures machine centers, chuck or grinding spindle at angle to grind tapered surfaces. Adjusts stops to limit travel of workpiece or grinding wheel. Moves controls to position wheel and workpiece in relation to each other and to set feed, speed and depth of cut. Starts machine, turns handwheels to feed grinding wheel to workpiece or vice versa and engages feeding device. Turns valve handle and directs flow of coolant against wheel and workpiece. Observes operation, and adjusts position and action of wheel and workpiece. Verifies dimensions of ground workpiece to comply with specifications, using measuring instruments such as templates, micrometers, dial indicators, comparators or fixed gauges.

May measure, mark and scribe workpiece to layout for grinding. May

grind non-metallic materials such as plastics. May operate tracer attachment to duplicate contours from template or model. May specialize in grinding particular materials or product or in particular type of precision-grinding machine and be designated accordingly; for example,

Blanchard-Grinder Set-Up Operator
Grinder Set-Up Operator, External
Grinder Set-Up Operator, Internal
Grinder Set-Up Operator, Surface
Grinder Set-Up Operator, Tool
Grinder Set-Up Operator, Universal

8313-222 GRINDER SET-UP OPERATOR, THREAD(mach., weld. & forg.) DPT:280
thread grinder.
GED: 4 SVP: 6 EC: I 5 6 PA: L 4 7

Sets up and operates thread-grinding machine to grind internal or external threads on metal parts, such as micrometer spindles, worm gears and lead screws, analyzing specifications and selecting tooling according to knowledge of thread grinding procedures:

Studies drawing and plans sequence of operations. Selects machine settings, such as positioning angles, rotation speeds, feed rates and gear ratios, using knowledge of shop mathematics. Selects grinding wheel, gears and cams, using knowledge of thread types, metal properties and abrasives. Installs grinding wheels, gears and cams, using wrenches. Dresses wheel to particular angles for thread to be cut, using dressing device. Positions and secures workpiece between centers or in chuck jaws. Sets stops to limit workpiece travel and activate grinding wheel withdrawal from thread on each successive cut. Moves controls to adjust, start and control operation of machine. Observes machine operation during grinding process. Verifies conformance of ground workpieces to specifications, using measuring devices, such as thread-measuring wires, micrometers, dial indicator, thread gauge and optical comparator (shadow-graph). Changes worn grinding wheel, using wrenches.

8313-226 MILLING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:280
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more milling machines to mill or plane curved surfaces on metal workpieces according to specifications:

Studies drawing or layout on workpiece to visualize machining requirements and to plan sequence of operations. Positions workpiece in fixture or on machine table, using devices, such as templates, shims, parallel blocks and planer gauges to align workpiece, and secures it with bolts and clamps. Selects rotary milling cutter and sets feed rate, cutting speed and depth of cut by moving controls and applying knowledge of metal properties and shop mathematics. Mounts milling cutter in spindle or on arbor. Manipulates handwheels to position cutter to workpiece, or workpiece to cutter, and engages automatic feed. Verifies alignment, using devices, such as dial indicator and thickness gauges. Turns valve handle and directs flow of coolant against cutter and workpiece. Computes indexing ratios, and sets up and operates dividing head to index workpiece for milling evenly divided surfaces, such as helical shapes. Verifies dimensions of milled workpiece, using measuring instruments, such as micrometers, calipers, gauge blocks and comparator. Mounts different tools in place of cutter to perform other operations, such as drilling and boring. Sets up and operates tracer attachment to duplicate contours from models or templates. Sets up universal head to mill at angles.

May work on non-metallic materials, such as plastics. May operate particular type of milling machine and be designated accordingly,
Planer-Type Milling-Machine Set-Up Operator

8313-230 PANTOGRAPH MILLING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:280
GED: 4 SVP: 6 EC: I 6 PA: L 4 7

Sets up and operates pantograph milling-machine to mill contoured two-dimensional profiles and three-dimensional cavities in metal parts for products such as dies and moulds used in metal die casting and plastic moulding by duplicating contour of template or model to specified scale:

Studies drawings, workpiece and template or model. Positions and secures workpiece and model or template in relation to each other on machine, using tools such as clamps, parallel blocks and wrenches. Selects tracing stylus and cutting tool, according to type of metal in

workpiece. Mounts stylus and tool, using hand tools. Turns controls to set cutting speed and dimensional ratio of model to workpiece and starts machine. Moves stylus back and forth against template or model, causing similar action of tool against workpiece. Observes tool, feels action and resistance of tool and manually controls cutting action by applying sufficient pressure to perform cutting operation. Verifies conformance of machined workpiece to specifications, using templates and measuring instruments, such as micrometers, dial indicators and gauges.

May make templates or cutting tools. May set up and operate pantograph-machine grinding to shape work pieces.

8313-234 PLANER SET-UP OPERATOR(mach., weld. & forg.) DPT:280
GED: 4 SVP: 6 EC: I 5 6 PA: H 4 7

Sets up and operates planer that reciprocates metal workpiece against cutting tool to plane and groove workpieces such as large castings for machines and engine bases, according to specifications:

Studies drawing or layout on workpiece to visualize planing to be done and plans sequence of machining operations. Selects methods of holding workpiece so that entire surface to be planed will remain parallel to table during planing operations. Lifts workpiece manually or with hoist, and positions and secures it on planer table, using shims, blocks, planer jacks, clamps and wrenches. Checks workpiece alignment with surface gauge, rule, square and dial indicator. Selects and mounts cutting tool(s) on rail head or side head. Selects and sets cutting speed and depth of cut, according to knowledge of metal properties. Sets stops to limit length of stroke and to actuate table reversing mechanism. Moves controls to position tool in relation to workpiece. Turns valve handle and directs flow of coolant against tool and workpiece. Starts planer and turns handwheels to feed tool or engages power feed. Observes planing operations and verifies dimensions of planed workpiece to specifications, using measuring instruments such as surface gauge, calipers, scale and micrometers.

May set up and operate milling attachment to plane or groove large metal workpieces. May be designated according to product or type of planer.

8313-238 PROFILING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:280
profile miller; tracer operator.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates milling machine equipped with tracing mechanism to mill duplicates of template or model contour on metal workpieces, such as cams, metalworking dies and machinery prototype parts:

Studies drawing or layout on workpiece and pattern or model to visualize milling required, and plans sequence of operations utilizing knowledge of profiling procedures. Positions and secures workpiece and pattern parallel to each other on angle plates or machine table, using clamps, wrenches and aligning devices, such as height or surface gauges, parallel bars, shims and jackscrews. Selects cutting speeds, depth of cut, cutting tool and corresponding tracing stylus. Positions and secures cutter and stylus in respective spindles. Turns switches and dials to position cutter and stylus at reference points on workpiece and template. Engages feeding mechanism. Changes and adjusts cutters, cutting speed and feed rate according to pattern shape. Verifies dimensions of milled workpiece to specifications, using gauges, calipers and micrometers.

May mill plastics or other non-metallic materials. May be designated according to particular operation, product, material, or type of machine used; for example, Tool-Profiling-Machine Set-Up Operator

8313-242 TAPE-CONTROL-MACHINE-TOOL SET-UP OPERATOR(mach., weld. & forg.) DPT:280
multi-purpose-machine operator, tape-control; numerical-control-machine operator.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates various punched-tape-controlled machine-tools that automatically mill, drill, broach and ream metal parts:

Bolts fixture to machine bed, using wrench. Positions and secures metal stock, castings or other workpiece in fixture according to program directions, using rule and calipers, clamps or bolts. Assembles cutting tools in toolholders and positions tools in machine spindles, or inserts cutting tools in specified machine magazines. Places control

tape in reading magazine and hooks tape beginning point over reading mechanism. Turns index of cutting tool dials to specified set point, turns switches to operating position and starts machine. Changes cutting tools and location of clamps and repositions metal workpiece on fixture as directed by program instructions. Observes machine operation and checks accuracy of machining against drawings or other specifications by measuring with micrometers, dial indicators and other gauges. Adjusts machine feed and speed when automatic programming is faulty or if machine malfunctions. Operates bench or pedestal grinder to shape and sharpen cutting tools.

8313-246 TURRET-LATHE SET-UP OPERATOR(mach., weld. & forg.) DPT:280
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates turret lathe to perform series of machining operations, such as turning, facing, boring, and threading on metal castings, forgings, weldments or other workpieces according to specifications and knowledge of machining operations:

Studies drawing and other specifications for dimensions and tolerances, visualizes machining operation to be carried out and plans sequence of operations. Sets up work-holding fixtures. Positions and secures work to faceplate, in chuck, collet, or holding fixture, using wrenches. Selects cutting speed, tool feed rate, depth of cut and cutting tools for each operation, according to knowledge of metal properties. Positions and secures tools in toolholders at each station of turret or in cross-slide toolpost, and in relation to workpiece. Moves controls to set rotation speed of workpiece and feeding of tools. Opens valve and directs flow of coolant against cutting tool and workpiece. Turns handwheels to feed tools to and along work and to index toolholders between operations, or engages feeding and indexing mechanisms. Checks dimensions of machined workpiece against specifications, using measuring instruments, such as fixed gauges, calipers, micrometers and comparator. Sharpens cutting tools, using bench grinder. Operates tracing attachment to duplicate profile of template or model on workpiece.

May work on non-metallic material, such as plastics. May be designated according to product or type of lathe used; for example, Turret-Lathe Set-Up Operator, Tool, Vertical

8313-250 GEAR-MILLING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:480
milling-machine operator, gear.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more gear milling machines to machine splines or gear teeth on metal blanks:

Reads drawing, job order and tooling instructions for specifications, such as gear type, number of teeth and cutter to be used. Computes gear dimensions and machine settings, using standard charts and applying knowledge of shop mathematics, gear types and milling procedures. Clamps workpiece in fixture, or presses it on arbor and positions arbor between centers. Positions and secures cutter on spindle in relation to workpiece, using wrenches. Moves levers or mounts change gears in machine to set feed rates and rotation speeds of cutter and workpiece in relation to each other. Starts machine and controls flow of coolant on cutter and workpiece. Regulates depth of cut by adjusting height of work or cutter, using handwheel. Verifies conformance of machined gears to specifications, using micrometers and gear-measuring wires, and special gear inspection equipment such as comparators and gear-tooth verniers.

May machine plastics or other non-metallic materials. May specialize in operating particular type of machine or in cutting particular type of gear.

8313-254 GEAR-SHAVER SET-UP OPERATOR(mach., weld. & forg.) DPT:480
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more gear-shaving machines that utilize gashed cutting tool in form of gear to shape and smooth gear teeth and correct errors and distortions left by roughing operation:

Computes index and feed rates, gear dimensions and machine settings, applying knowledge of shop mathematics and gear formulas or reads mechanical drawings and job orders for production specifications. Installs gear on arbor and mounts it between centers, using hand tools. Mounts cutter on cutter head. Moves controls to set feeds, speeds and reciprocating action and angles of cutter and gear. Turns hand wheels to feed gear to cutter and engages automatic feed. Verifies

conformance of shaved gears to specifications, using micrometers and gear measuring instruments, such as measuring wires and involute checker.
May machine non-metallic gears.

- 8313-258 SPIRAL-BEVEL-GEAR-GENERATOR SET-UP OPERATOR**(mach., weld. & forg.) DPT:480
curved-tooth-gear-generator operator; hypoid-gear-generator operator; spiral-gear-generator operator.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more spiral-bevel-gear generating machines to machine spiral or hypoid teeth in metal bevel-gear-blanks:

Computes data, such as gear dimensions and machine settings, applying knowledge of shop mathematics, and gear types, and reads mechanical drawings, job order, tooling instructions and standard charts for specifications. Clamps gear blank in fixture or presses it on arbor and positions assembly to correct cutting angle. Positions and secures cutter on spindle in relation to workpiece, using wrenches and turning hand wheels. Mounts gears, cams or templates in machine to control indexing of workpiece and rolling motion of cutter. Moves levers to set rotation speeds of cutter and workpiece. Starts machine, opens valve and directs flow of coolant against cutter and workpiece. Verifies conformance of machined gear to specifications, using devices such as micrometers, master gears and other special gear inspection equipment.
May machine plastics or other non-metallic materials.

- 8313-262 THREAD-MILLING-MACHINE SET-UP OPERATOR**(mach., weld. & forg.) DPT:480
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates thread-milling machine to mill threads on external and internal surfaces of metal workpieces:

Computes dimensions, cutting speeds or feed rates, using knowledge of metal properties, thread types and shop mathematics. Mounts and secures workpiece in fixture or chuck, using clamps and wrenches. Installs specified cutter in spindle or on arbor. Positions cutting tool and workpiece to computed angles, installs gears and cams, and sets stops to control multiple movements of workpiece and cutting tool. Moves controls to set cutting speed, feed rate and depth of cut according to computations or tooling instructions. Starts machine and engages feeding device. Turns valve handle and directs flow of coolant over cutting area. Inspects milled workpiece, using thread gauges, measuring wires and other thread-measuring instruments.
May set up and operate other machine-tools.

- 8313-266 TOOL GRINDER**(mach., weld. & forg.) DPT:480
cutter grinder; tool dresser; toolroom grinder.
GED: 4 SVP: 6 EC: I 5 6 7 PA: M 4 7

Sets up and operates grinding machines and equipment, such as surface, universal and tool and cutter grinders to shape or sharpen precision-cutting tools, gauges and dies:

Reads drawings and prepares dimensional sketches of tools and gauges requiring grinding. Computes cutting and clearance angles of cutting tools, utilizing shop mathematics. Plans and lays out work and sets up equipment, using variety of precision-measuring devices, machine attachments and fixtures. Selects grinding wheel of required shape and grade, using knowledge of abrasives and metal properties. Positions and secures workpiece on machine table, using magnetic chuck or holding fixture or mounts workpiece on arbor and clamps between centers. Turns handwheels to position table or spindle, to obtain specified taper, level and clearances on edges of cutting tools. Adjusts controls to feed work at proper rate against grinding wheel. Measures workpieces to verify conformance to specifications, using fixed gauges, micrometers, calipers, optical comparators and surface gauges. Removes, dresses, and installs grinding wheels to change cutting action or shape.

May design, modify or make special tools according to specifications or tooling requirements. May braze or solder carbide tips to cutting tools.

- 8313-270 GEAR GENERATOR SET-UP OPERATOR.**
STRAIGHT BEVEL(mach., weld. & forg.) DPT:480
bevel-gear-generator operator; straight-tooth-gear-generator operator.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more straight-tooth bevel-gear generating machines to machine straight teeth on metal bevel-gear blanks:

Studies drawing, or job order for product specifications, such as gear type, dimensions, number of teeth, tooling instructions and standard charts for machine settings and cutters to be used. Mounts workpiece on arbor and positions it to cutting angle. Positions and clamps one or two cutters in toolhead(s) and positions cutter cradle to specified angle, using wrenches. Mounts gears in machine to control rotation speed and indexing of workpiece, cutting speed, and rolling motion of cutter cradle. Starts machine, turns valve handle and directs flow of coolant against reciprocating cutters and workpiece. Verifies conformance of machined gear to specifications, using devices, such as micrometers, master gears, and special gear-inspection equipment. Machines gears from plastics or other non-metallic materials.
May compute gear dimensions and machine settings applying knowledge of shop mathematics and gear calculations.

- 8313-274 GEAR-HOBBER SET-UP OPERATOR**(mach., weld. & forg.) DPT:480
hobbing-machine setter.
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more gear-hobbing machines to cut splines or spur, helical or worm gear teeth on metal gear blanks according to specifications, tooling instructions, standard charts and knowledge of gear hobbing procedures:

Clamps gear blank in fixture or presses it on arbor and mounts arbor between centers. Positions and secures specified hob on arbor in relation to workpiece, using wrenches. Moves levers or selects and mounts change gears in machine, to set feed rates and rotation speeds of hob and workpiece. Turns handwheel to feed hob and workpiece together, and engages automatic feed. Turns valve handle to control flow of coolant against hob and workpiece. Verifies conformance of hobbled gears to specifications, using devices, such as micrometers, gear measuring wires, master gears and involute (curve) checker.

May compute data, such as gear dimensions, change gear ratios and machine settings, applying knowledge of shop mathematics. May specialize in cutting particular type of material or gear or using particular type machine.

- 8313-278 HONING-MACHINE SET-UP OPERATOR**(mach., weld. & forg.) DPT: 480
precision-honing-machine operator.
GED: 4 SVP: 6 EC: I 6 PA: M 4 7

Sets up and operates one or more vertical-or horizontal-honing machines to hone internal or external surfaces of metal objects, such as cylinders, bearings and connecting rods

Studies drawings and job order for product specifications, such as dimensions, tolerances, quantity, speeds, feed rates, work-holding fixtures and honing tools to be used. Plans sequence of operations. Positions and secures fixtures and workpiece on machine table, using squares, steel rules, dial indicators, micrometers, surface gauges and wrenches. Inserts and tightens specified tool in spindle. Moves controls to set tool-feed rate and spindle speed. Sets stops to control length of stroke and depth of cut. Starts machine and turns hand wheels to feed tool to workpiece and engages automatic mechanism to feed tool along workpiece surface with oscillating action. Turns valve handle and directs flow of coolant against tool and workpiece. Measures honed workpiece for conformance to specifications, using preset gauges, surface and telescoping gauges, micrometers, and comparators.

- 8313-282 SCREW-MACHINE SET-UP OPERATOR**(mach., weld. & forge.) DPT: 480
automatic-screw-machine operator
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates one or more single-or multiple-spindle lathe-type screw machines equipped with automatic feeding and tool-indexing mechanisms to perform turning, boring, threading, and facing operations on metal bar stock:

Studies drawing or sketches to visualize machining to be done and plan sequence of operations. Selects cutting speeds, feed rates, depth of cuts and cutting tools to be used, applying knowledge of metal properties and shop mathematics. Installs collets, bushings and stock pushers in stock-feeding mechanism, using wrenches and screwdrivers. Loads feeding mechanism with bar stock, manually or with hoist. Installs and adjusts cams, gears and stops to control stock and tool movements at each station. Positions and secures tools in tool holders, checking positions with gauges and other measuring instruments. Moves controls to set cutting speeds and feed rates. Hand cranks machine through test cycle, stopping machine and adjusting tool positions and machine controls to allow for such factors as timing, clearance between moving parts, and chip removal. Starts machine, observes operation and checks dimensions of first-run workpieces to specifications, using measuring devices; such as, plug and ring gauges, calipers, micrometers, and comparator. Replaces worn tools. Operates bench grinder or cutter grinder to sharpen tools. May machine plastics or other non-metallic materials. May be designated according to type of machine used; for example, Screw-Machine Set-Up Operator, Multiple-Spindle, Jobbing Screw-Machine Set-Up Operator, Production

8313-286 SHAPER SET-UP OPERATOR(mach., weld. & forg.) DPT:480
GED: 4 SVP: 6 EC: I 5 6 PA: M 4 7

Sets up and operates shaping machine that reciprocates cutting tool bit against stationary metal workpiece to plane, shape or groove machine, tool, die or other parts:
Studies drawing or layout on workpiece to plan sequence of operations and determine tooling required. Positions and secures workpiece in vise or directly on machine table, using clamps and wrenches. Verifies position with thickness gauges, surface gauge and dial indicator. Selects cutting speed, length of stroke and cutting tool to be used, according to knowledge of metal properties and shop mathematics. Shapes, sharpens, positions and secures cutting tool in toolpost. Adjusts position of shaper ram so that tool will move over length of workpiece and makes trial pass. Starts machine, adjusts depth of cut and sets automatic feed. Verifies conformance of shaped workpiece to specifications by measuring with micrometers, calipers and gauges. Opens valve and directs flow of coolant against tool and workpiece. Shapes contours by manually adjusting tool feed to follow irregular lay-out lines while watching cutting action. Computes angles and adjusts controls to tilt table or toolhead for angular or taper shaping. May machine non-metallic materials, such as plastics.

8313-290 BROACHING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:480
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates one or more broaching machines to broach internal or external curved or flat surfaces of metal workpieces, standard charts and knowledge of broaching:
Reads drawings, job order or other specifications to determine positions, dimensions and tolerances, and standard charts and tooling instructions for holding fixtures, cutting speed and cutting broaches. Lifts workpiece manually or with hoist, and positions and secures it in fixture. Installs broach on ram, using wrenches. Moves controls to set specified depth of cut and ram speed, and to start ram that pushes or pulls broach along surface of work. Checks dimensions of broached workpiece to specifications, using measuring instruments, such as fixed gauges, calipers and micrometers. May broach non-metallic materials, such as fibreboard or plastics.

8313-294 DRILL-PRESS SET-UP OPERATOR, SINGLE SPINDLE(mach., weld. & forg.) DPT:480
drill-press operator.
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates single-spindle drill press to drill, countersink, spot face and tap holes in metal parts or stock:
Reads drawings, job order and tooling instructions for hole locations and dimensions, feed rates, holding fixtures, cutting speeds and cutting tools. Secures drill in spindle. Measures, marks, scribes and center punches workpiece for machining, applying knowledge of shop mathematics and layout procedures. Lifts workpiece manually or with hoist and positions in fixture or on machine table and secures it with clamps, Vee blocks, angleplate, or vise or manually holds it in position under spindle. Aligns hole center location on workpiece

directly in line with center of cutting tool. Makes trial cut and readjusts work position and hole center to achieve exact hole location, using drawing chisel and hammer. Moves controls to set cutting speed, feed rate and depth stop and to feed tool manually, or engages automatic feed. Opens valve and directs flow of lubricant against tool and workpiece, or applies lubricant with oil can. Checks dimensions of machined workpiece to specifications, using measuring instruments, such as calipers, dividers, telescoping gauges and micrometers. May position and secure drilling jig to guide cutting tools. May tilt table or spindle to machine holes at specified angles. May be designated according to type of drill press operated; for example, Sensitive-Drill-Press Operator

8313-298 GEAR-LAPPING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:480
gear finisher.
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates gear-lapping machine to finish gear teeth to specifications:
Reads drawing or job order for specifications, such as gear dimensions, tolerances and number of gears to be lapped, and tooling instructions for lapping speeds and pressures, work-holding fixtures and spindle angles to be used. Positions and secures pairs or trains of gears on spindles, using fixture and wrenches. Moves controls to set spindle angles, lapping speeds, pressure and length of cycle. Brushes or sprays lapping compound on gears. Starts machine, examines gear contact area and moves handwheels to adjust action of gears. Inspects lapped gears for conformance to specifications applying knowledge of gear design and surface finishing. Inspects finish and mechanical action of gears with gear inspection equipment.

8313-302 GRINDER, GEAR(mach., weld. & forg.) DPT:480
gear-tooth-grinding-machine operator.
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates gear-grinding machine to grind surfaces of splines or gear teeth:
Studies drawing, job order and tooling instructions for specifications, such as gear type, dimensions, number of teeth, machine settings and abrasive wheel to be used. Clamps workpiece in chuck or fixture or presses it on arbor and mounts it between centers. Positions and secures grinding wheel on arbor in relation to workpiece, using wrenches. Moves levers or selects and installs gears in machine to obtain correct feed rates, angle, and rotation speeds of grinding wheel and workpiece. Turns handwheels to feed grinding wheel to workpiece or vice versa. Indexes workpiece and engages automatic feeding for each tooth cut. Turns valve handle and directs flow of coolant against wheel and workpiece. Sets up and operates wheel-dressing device to dress and true abrasive wheel. Verifies conformance of ground gear or spline to specifications, using micrometer, gear measuring wires, involute checker and master gear. May compute data, such as gear dimensions and machine settings, applying knowledge of shop mathematics. May be designated according to particular material or gear type, or type of machine used.

8313-306 GRINDER SET-UP OPERATOR, CENTERLESS(mach., weld. & forg.) DPT:480
centerless grinder.
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates one or more centerless-grinding machines to grind external or internal cylindrical or tapered surfaces of metal workpieces:
Reads drawings and job order for specifications, such as dimensions and tolerances and tooling instructions for grinding speeds, feed rates, holding fixtures and grinding wheels to be used. Mounts grinding wheels on spindles, using wrenches. Dresses wheels to specifications, using dressing device. Moves control to set specified grinding speeds, feed rates and spacing between grinding-wheel faces. Positions and secures work rest at specified height, using wrenches. Lifts and positions workpiece manually or with hoist and secures it between grinding wheels and on work rest. Starts machine and observes operation. Verifies dimensions of ground workpiece for conformance to specifications, using measuring instruments, such as micrometers, calipers and preset gauges. May operate a particular type of grinder, or grind a particular product or material and be designated accordingly.

8313-310 GEAR-SHAPER SET-UP OPERATOR(mach., weld. & forg.) DPT:480
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates one or more gear-shaping machines to machine splines or gear teeth in metal blanks:
Reads drawing for information on dimensions and tolerances. Computes data, such as gear dimensions and machine settings, applying knowledge of shop mathematics and gear shaping procedures. Clamps workpiece in fixture or presses it on arbor. Positions and secures specified cutter on spindle in relation to workpiece and sets length of stroke, using wrenches. Moves levers and mounts gears in machine to set feed rates, cutting speeds and rotation speeds of cutter and workpiece, according to tooling instructions. Mounts guides to control twisting motion of spindle for cutting helical gears. Opens valve and directs flow of coolant against cutter and workpiece. Verifies conformance of machined gears to specifications, using devices such as micrometers, go-no-go gauges, master gears, gear-measuring wires and special gear-inspection equipment. May machine plastics or other non-metallic materials.

8313-314 KEYSEATING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:480
slotter operator.
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates keyseating machine to cut key seats in metal workpieces, such as wheels and gears following specifications, and standard charts:
Reads drawing or job order for dimensions and tolerances, and tooling instructions for holding fixtures, cutting speeds, depth of cut, and cutting tools to be used. Measures workpiece and scribes guidelines for cutting keyseat, using steel rule and scriber. Mounts specified tool on ram. Lifts workpiece manually or with hoist, aligns it with cutting tool and secures it in fixture or to post on machine table, using clamps and wrenches. Moves controls to set specified ram speed, length of stroke and feed rate. Turns handwheel to feed reciprocating tool to workpiece until specified depth is cut, or engages automatic feeding device. Checks dimensions of machined workpiece against specifications, using fixed gauges, calipers, scale and micrometers. Cuts tapered keyseats by adjusting tilt of table, using handwheel or adjusting screw.

8313-318 LAPPING-MACHINE SET-UP OPERATOR(mach., weld. & forg.) DPT:480
lapping-machine operator.
GED: 4 SVP: 5 EC: I 6 PA: M 4 7

Sets up and operates lapping machines to lap surfaces of metal objects to precise tolerances and specified finish, applying knowledge of lapping tools, abrasives and lapping procedures:
Reads drawings, job orders and tooling instructions for specifications, such as tolerances, lapping speeds and pressures, work-holding fixtures, laps to be used and quantity of parts requiring lapping. Installs laps on machine spindles, using wrenches. Positions and secures workpiece or mating workpieces together in fixture, or on machine table. Moves controls to set lapping speeds, tool pressure, length of cycle and to guide action of laps against workpiece or workpieces against each other. Starts machine and brushes or sprays lapping compound on laps and workpieces. Inspects lapped workpiece for conformance to specifications, using instruments, such as comparator, monochromatic light, gauges and surface plates.

8313-322 RADIAL-DRILL-PRESS SET-UP OPERATOR(mach., weld. & forg.) DPT:480
GED: 4 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates radial drill press to drill, bore, ream, countersink, counterbore, spot face or tap holes in metal workpieces, such as machine, tool or die parts:
Examines layout of workpiece or mechanical drawing and instructions for hole locations and dimensions, and plans sequence of operations. Positions and secures workpiece on machine table, using devices such as bolts, clamps, shims, blocks, vises, angle brackets and wrenches to hold workpiece. Verifies position, using surface gauge. Secures tool in spindle. Selects and sets cutting speed, feed rate and tool for each operation according to knowledge of metal properties and diameter of hole. Swings radial arm and moves controls to position tool along radial arm over hole center. Manually feeds tool into workpiece and

engages automatic feed. Observes operation and makes adjustments to tool position and depth of hole. Verifies conformance of machined workpiece to specifications, using measuring instruments; such as, telescopic and fixed gauges, calipers and micrometers. Dresses cutting tools, using pedestal or bench grinder.
May measure, mark and scribe hole locations on workpiece. May work on non-metallic materials. May be designated according to product machined; for example, Radial-Drill-Press Set-Up Operator, Tool

8313-326 MAIN-BEARING BORER(mach., weld. & forg.) DPT:481
GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Operates machine to bore new or reconditioned main bearings for internal combustion engines, by one of the following methods:
Clamps engine block, bottom side up, on holding stand. Removes bearing caps and mills down mating surfaces to make bearings undersize in diameter. Places boring bar in guides at each end of engine and adjusts guides to center boring bar with bearing centers, using dial center gauges. Replaces and bolts down bearing caps, using torque wrench. Installs and sets fly cutters in boring bar, using dial micrometer. Aligns and connects electric motor with boring bar, using quick-disconnect universal coupling. Starts and observes operation of boring bar. that cuts machined surface on inside of bearing to specified measurement. Bolts engine block, bottom side up, on holding stand. Bolts line-boring machine onto bottom side of block. Inserts boring bar through main bearings and clamps bar into machine holders. Adjusts and centers boring bar according to readings on centering gauge. Installs and adjusts fly cutters in boring bar, using micrometers. Turns boring bar crank by hand to machine bearing surface. Verifies accuracy of machining, using micrometer, calipers, and by fitting specific test crankshaft into bearings and checking flow of air or oil passing under pressure through lubricating holes. May cast babbitt-bearings in engine block bearing housings, using moulds, preparatory to machining.

8313-330 METAL-BAND-SAW OPERATOR(mach., weld. & forg.) DPT:682
contour-band-sawing-machine operator
GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates contour-band-sawing machine to saw straight, curved and irregular cuts in metal workpieces:
Studies job order and drawing or layout for product specifications, such as dimensions and tolerances. Selects saw blade and cutting speed according to type of material to be cut. Cuts blade and threads through workpiece hole for internal cuts and welds blade ends together to form continuous band, using resistance butt-welding attachment. Positions blade around driving wheels and adjusts blade tension, guides and table angle. Starts machine and guides workpiece along lay-out lines or sets up and engages feeding device. Turns valve handle to regulate flow of air to clean cutting area. Verifies conformance of sawed workpiece to specifications, using measuring instruments, such as steel rule, calipers, fixed gauges and micrometers. May replace saw blade with file band to file workpieces. May cut plastics or other non-metallic materials. May compute dimensions, measure and mark workpiece to lay-out for sawing. May be designated according to type of saw operated; for example, Do-All-Saw Operator

8313-332 PRINTING-ROLLER GRINDER AND POLISHER(mach., weld. & forg.; mech., equip., n-e.c.) DPT:682
GED: 3 SVP: 5 EC: I 6 7 PA: M 4 7

Operates lathes to grind and polish metal printing rollers, to specified diameter and finish:
Mounts roller in grinding lathe, using hand tools and hoist. Selects grinding wheel, installs it on machine spindle, and starts machine. Turns hand wheels to bring grinding wheel in contact with roller surface, and moves lever to engage automatic feed. Stops machine at intervals, and measures roller diameter, using micrometer. Continues grinding operation until specified diameter is obtained. Removes roller to polishing lathe, and installs polishing stone on machine head. Starts machine and engages lever, so that polishing stone moves back and forth along surface of rotating roller. Stops machine at intervals to measure diameter and inspect finish of roller, and continues polishing operation until specified diameter and finish are obtained. Covers

surface of roller with oil and waxed paper, using brush and adhesive tape.

8313-334 ROUTER OPERATOR(mach., weld. & forg.)
DPT:682
GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Operates routing machine to cut, slot and profile flat, formed and extruded parts of aluminum plastic, wood or similar materials: Reads drawings to determine material and dimensional information. Selects and installs specified cutting tool and adjusts depth of cut. Clamps material between templates or wood blocks, using C- clamps. Places assembly or part on machine bed against guide pin and depresses pedal to lower rotating cutter into workpiece. Turns valve handle to regulate flow of coolants on cutting area. Holds and turns workpiece against guide pin and under cutter to remove material and perform operations such as profiling, chamfering and slotting.

8315-MACHINE-TOOL OPERATING OCCUPATIONS

This unit group includes occupations concerned with operating or tending metal cutting machines normally set up for repetitive-type work. Workers in these occupations operate or tend one or more machines to perform machining operations; such as, milling, drilling, planing, turning, boring, sawing, precision grinding, honing and broaching, to produce or repair finished or semi-finished parts.

8315-110 FITTER, FIREARMS(metal fab., n.e.c.) DPT:682
GED: 3 SVP: 6 EC: I 6 PA: L 4 7

Fits together and finishes metal firearms parts preparatory to assembly, using hand and machine tools: Removes burrs and rounds sharp edges, using files and scrapers. Calculates amount of metal to be removed from parts, using micrometer, and gauges. Operates drill press, electric drill and lathe, equipped with rotary file or abrasive wheel, to smooth interior surfaces of holes. Polishes movable parts by hand to ensure smoothness and ease of action, using polishing compounds or emery cloth. Assembles gun parts, such as sliding bolts, triggers and extractors ensuring accurate fit of all parts. Stamps serial numbers on parts, using hammer and punches. May repair and refinish damaged parts returned by customers.

8315-114 AUTOMATIC-WHEEL-LINE OPERATOR(railway)
DPT:682
GED: 3 SVP: 6 EC: I 5 6 PA: M 4 7

Operates and controls series of machines to machine railroad car wheels to specifications: Changes chucks, boring bars and cutting tools according to specifications on production orders, using hand tools. Positions wheel in machine, using electric hoist. Pushes buttons on console panel to start machines that perform threading, flanging, boring and other operations to finish wheels. Observes action of machines and transfer stations to detect malfunctions. Examines machined surfaces of wheels at specified stations to detect defective cutting tools and reports faulty work to supervisor. Inspects finished wheels for defects and accuracy, visually and with calipers and steel scale. Removes wheels from machine, using electric hoist.

8315-118 CONNECTING-ROD BORER(motor vehicle)
DPT:682
GED: 3 SVP: 6 EC: I 5 6 PA: M 4 7

Operates machine to bore bearing surfaces of engine connecting rods to fit reconditioned crankshafts: Aligns connecting rod in holding device. Inserts and adjusts fly cutter in boring bar. Moves levers to control feed and to rotate boring bar to machine bearing surfaces. Checks dimensions of machined surfaces, using micrometer. Tests rod for defects such as bends and twists, and straightens rod, using hand-operated press. Grinds flat surfaces of connecting rods and bearing caps, using grinding machine. Drills and reams bolt and oil holes, using power drill and hand reamer.

8315-122 MACHINE-TOOL OPERATOR, PRODUCTION(mach., weld. & forg.) DPT:682
GED: 3 SVP: 6 EC: I 5 6 PA: M 4 7

Operates any of a variety of previously set-up machine-tools, such as lathes, drill presses, milling machines, grinders or special purpose machines to machine metal workpieces on a production basis: Lifts workpiece manually or with hoist and positions and secures it in fixture, or loads automatic feeding device. Starts machine and moves controls to position workpiece and cutting tools in relation to each other. Engages power feed. Opens valve and directs flow of coolant against cutter and workpiece. Observes machining cycle. Verifies conformance of machined workpieces to specifications, using instruments such as preset comparator, fixed gauges, calipers, micrometers and dial indicator. Reports deviations from specifications to set-up man or foreman. Changes worn cutting tools, using wrenches. May operate bench grinder to sharpen tools. May machine plastics or other materials.

8315-126 WOODWORKING-CUTTER SHARPENER(metal fab., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Operates one or more types of grinding machines to shape and sharpen woodworking-machine cutters: Fastens straight cutters to holder or table of machine or bolts cutter-head assembly to machine spindle. Turns handwheels to set travel of cutter across face of grinding wheel according to length of blade and to adjust pressure of wheel against cutter. Starts machine and observes grinding operation to ascertain when nicks and burrs are removed and cutter is sharpened. Positions template to sharpen shaped cutters in holder and clamps assembly in place on machine table. Starts machine and turns handwheels to move and guide cutter against grinding wheel and follow lines of template to shape and sharpen cutter. Hones cutting edges of ground knives and cutters, using fine whetstone and oil. May sharpen and set teeth of circular saw blades, using saw grinding or filing machines.

8315-130 AUTOMATIC-LATHE OPERATOR, CLOCK(scient. & ind. equip., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Operates battery of automatic lathes to drill, ream, tap, chamfer, knurl and countersink stock to produce clock and watch parts, such as balance staffs, cannon pinions, pillars, nuts, screws and winding stems: Loads machine with specified stock, such as rod or wire and starts machine. Changes and sharpens cutting tools, such as drills, taps and dies. Reads dimensions from drawings and verifies specified tolerances for parts, using gauges. Adjusts lathe to duplicate original setup.

8315-134 BRAKE-DRUM-LATHE OPERATOR(motor vehicle)
DPT:682
GED: 3 SVP: 5 EC: I 5 6 PA: M 3 4 7

Operates brake-drum lathe to refinish automotive brake-drums, and grinding machine to grind brakeshoe linings: Fastens drum in lathe, using chuck or spindle, and adjusts cutting tool to machine drum surface. Starts lathe and feeds tool into drum by hand or engages automatic feed mechanism. Repeats cut as necessary to eliminate scored and worn areas. Measures drum to verify dimensions, using calipers, drum gauge, micrometers or vernier scale. Clamps brakeshoes in grinding machine or grinder on car axle and grinds brake linings to specified arc as determined by new diameter of machined drum.

8315-138 SCREW-MACHINE OPERATOR, CUSTOM(mach., weld. & forg.) DPT:682
GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates one or more previously set-up single- or multiple-spindle-screw machines equipped with automatic indexing and feeding mechanism, to perform series of machining operations on metal bar stock on custom basis, following specifications: Reads drawing and job order for information, such as dimensions, tolerances, gauges and quantity. Verifies machine and tool setup. Loads stock into feeding mechanism. Starts machine and observes

operation. Verifies conformance of sample workpieces to specifications, using fixed gauges, micrometers and dial indicators. Replaces worn tools, such as drills and counterbores, using hand tools. Adjusts machine controls and changes tool settings to keep dimensions within specified tolerances.

May operate bench grinder or cutter-grinding machine to sharpen tools. May be designated according to type of machine operated; for example,

Screw-Machine Operator, Multiple Spindle

Screw-Machine Operator, Single Spindle

8315-142 BORING-MACHINE OPERATOR, PRODUCTION(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates previously set-up single- or multiple-spindle-boring machines to bore and drill holes in metal workpieces, such as housings, frames, and cylinders to specifications on production basis:

Lifts workpiece manually or with hoist and clamps it in holding fixture. Moves lever to feed tools into workpiece. Moves controls to adjust cutting speeds, feed rates and depth of cut. Observes machine operation and verifies conformance of bored workpiece to specifications, using measuring instruments. Assists in setting up machine and changes worn tools.

May bore or drill plastics or other non-metallic materials. May be experienced with particular material, product, or type of machine and be designated accordingly.

8315-146 COLLET MAKER(scient. & ind. equip., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I PA: S 4 7

Makes watch collets, using three-stage machine to cut and chamfer outside diameters, face them to specified thickness, drill hairspring hole, and saw slot in collet:

Feeds collets into machine and starts machine, controlling operation by co-ordinated hand and foot movements. Feeds cutting tools against collets by hand, exercising delicate and uniform touch. Removes collets and verifies finished dimensions, using precision gauges. Makes minor machine adjustments to keep product within specified tolerances.

8315-150 DRILL-PRESS OPERATOR, PRODUCTION(mach., weld. & forg.) DPT:682
drilling-machine operator, production.
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates previously set-up single- or multiple-spindle-drilling machines to drill, ream, countersink, spot-face or tap holes in metal workpieces on a production basis:

Clamps workpiece in drill, jig or holding fixture. Moves lever to feed tools into workpiece. Observes machine operation and verifies conformance of machined workpiece to specifications, using measuring instruments.

May operate particular type of drilling machine and be designated accordingly; for example,
Gang-Drilling-Machine Operator
Radial-Drill-Press Operator

8315-154 FILE CUTTER(metal fab., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates machine that cuts teeth in steel file blanks:

Adjusts chisel-type-cutting tool on reciprocating arm of machine to specified depth, angle and feed, to obtain correct number of teeth per inch. Changes lead beds on machine table when shape and size of files vary or because of worn bed. Positions blank on bed and starts machine that automatically feeds blanks to cutting tool. Sets up table in series of angular positions to cut teeth on back of specially shaped files. Sets up and operates turning device to produce helical cuts on round files. Changes and sharpens cutters as necessary.

8315-158 HONING-MACHINE OPERATOR, PRODUCTION(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I PA: M 4 7

Operates one or more previously set-up honing machines to hone surfaces of metal parts, such as cylinders, bearings, and connecting rods to specifications, on production basis:

Obtains information such as dimensions and number of parts to be produced from job order. Secures workpiece in position and actuates mechanism to feed hone to workpiece. Adjusts feed rate and spindle speed. Measures finished workpiece with fixed gauges or micrometers to ensure conformance to specifications. Changes worn hones, using wrenches.

May read mechanical drawings. May assist in setting up machine. May have experience with particular material, product, or machine and be designated accordingly,
Cylinder Honer

8315-162 METAL-SAWING-MACHINE OPERATOR(mach., weld. & forg.) DPT:682
cut-off-saw operator, metal; power-saw operator, metal.
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates power sawing machines, such as hacksaw, bandsaw, circular saw, friction saw or rubber disk saw to cut metal stock to specified dimensions:

Reads job order for information as to type of metal, size of stock and dimensions to be cut. Obtains and transfers stock to saw manually or with hoist. Selects and mounts saw blade and sets cutting speed for specific type of metal. Sets stops and guides to control dimension of cut, using steel rule, wrench and square. Positions and secures stock against stops or in feeding device. Starts machine, turns valve handle and directs flow of coolant against cutting area and blade, and observes saw operation. Marks identifying data on workpiece.

May have experience with custom or production work, or with particular material, product, size of workpiece or type of machine. May place and pile cut stock, clean up work area and collect salvageable material.

8315-166 THREADING-MACHINE OPERATOR(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 5 7 PA: M 4 7

Operates threading machine to thread and chamfer round stock according to specifications:

Selects, installs and adjusts threading die, die cutters, chamfering tool, feed grips, pressure tripping mechanism, cams, gears and pulleys, using screwdrivers and wrenches. Positions and secures precut stock in jaws of threading machine. Starts machine and moves handwheel or lever to feed stock into dies. Verifies dimensions of workpieces, using fixed gauges and scale.

May sharpen die cutters on grinding machine. May be designated according to type of stock threaded; for example,
Bolt-Threading-Machine Operator
Pipe-Threading-Machine Operator

8315-170 DRILLING-AND-END-MILLING-MACHINE OPERATOR (mach., weld. & forg.) DPT:682
GED: 3 SVP: 3 EC: I 5 PA: L 4 7

Operates combination horizontal-drilling and end-milling machine to drill and finish ends of rails:

Moves levers to convey rail along roll line and to position rail in drill press. Moves machine-mounted gauge along calibrated scale to determine amount of milling required and location of drill holes. Tightens set-screw to secure gauge in position. Presses button to reposition rail and clamp rail in place. Moves controls to simultaneously feed milling cutter and drills to workpiece, and engages automatic feeds. Presses button to regulate flow of coolant. Observes operation to detect machine malfunction. Verifies conformance of machined workpiece to specifications, using fixed gauge and calipers. Changes drills and milling cutters, using wrenches. Moves controls to start roll line and to route drilled rail to inspection bed.

8315-174 GRINDER OPERATOR, PRODUCTION(mach., weld. & forg.) DPT:682
production grinder.
GED: 3 SVP: 3 EC: I 5 PA: M 4 7

Operates one or more previously set-up grinding machines to grind surfaces of metal workpieces to specifications on production basis: Places workpiece in holding fixture, between centers, on magnetic table or in direct contact with grinding wheels, and engages work feed. Moves controls to adjust depth of cut, grinding speeds and feed rates. Verifies dimensions of ground workpiece for conformance to specifications, using measuring instruments. Replaces worn grinding wheels, using wrenches or dresses wheel with dressing device. May be designated according to type of machine used; for example, Centerless-Grinder Operator, Production External-Grinder Operator, Production Internal-Grinder Operator, Production Surface-Grinder Operator, Production

8315-178 LATHE OPERATOR, PRODUCTION(mach., weld. & forg.) DPT:682
GED: 3 SVP: 3 EC: I 5 6 PA: M 4 7

Operates one or more previously set-up production lathes, to perform one or series of repetitive operations, such as turning, boring, threading or facing of metal workpieces, according to specifications: Positions and secures workpiece in chuck or holding fixture. Starts machine, and engages automatic feed. Moves lathe controls to adjust rotation speeds, feed rates and depth of cut. Observes machining cycle and verifies conformance of machined parts to specifications, using measuring instruments. Assists in setting up lathe. May machine non-metallic materials, such as plastics. May operate particular type of machine and be designated accordingly, Turret-Lathe Operator, Production

8315-182 MILLING-MACHINE OPERATOR, PRODUCTION (mach., weld. & forg.) DPT:682
GED: 3 SVP: 3 EC: I 6 PA: M 4 7

Operates one or more previously set-up milling machines to mill surfaces of metal workpieces to specifications on production basis: Secures workpiece on bed of machine between centers or in fixture. Engages automatic feed and observes operation of milling cutters. Verifies conformance of milled pieces to specifications, using measuring instruments, such as fixed gauges or micrometers. May mill non-metallic materials, such as plastics. May operate particular type of machine and be designated accordingly, Universal-Milling-Machine Operator

8315-186 BROACHING-MACHINE TENDER, PRODUCTION (mach., weld. & forg.) DPT:685
broacher, production.
GED: 3 SVP: 3 EC: I 5 6 PA: M 4 7

Tends one or more previously set-up broaching machines to broach internal or external surfaces of machine parts to specifications, on a production basis: Lifts workpiece manually or with hoist and secures it in holding fixture. Starts machine, observes operation, and verifies conformance of broached workpieces to specifications, using measuring instruments, such as fixed gauges.

8315-190 SCREWMAKER, AUTOMATIC(mach., weld. & forg.) DPT:685
GED: 3 SVP: 3 EC: I 6 PA: L 4 7

Tends machine that automatically shapes and cuts wire stock to make watch screws: Inserts wire into feed mechanism and starts machine that turns head and shank of screw to specified size, threads and cuts screw to length, and slots head. Measures thread and length of finished screw, under loupe, for conformance to specifications, using pitch and upright gauges. Adjusts machine setup by turning knobs and wheels to control depth of cut, speed and feed, to keep product within specifications.

8315-194 TAPPING-MACHINE TENDER(mach., weld. & forg.) DPT:685
GED: 3 SVP: 3 EC: I 5 PA: L 4 7

Tends previously set-up tapping machine to perform repetitive operation of threading drilled holes in plastic or metal workpieces according to specifications, on production basis: Inserts workpiece in machine, clamps it in place, aligns hole under tap and starts machine. Removes finished workpiece from machine. Spot checks sizes of tapped holes, using thread gauges. May operate multiple-spindle-tapping machine. May gauge threaded workpieces and change worn taps to maintain specified tolerances.

8315-198 TRANSFER-MACHINE TENDER(mach., weld. & forg.) DPT:685
automatic-transfer-machine operator.
GED: 2 SVP: 4 EC: I PA: M 4 7

Tends machine that automatically transfers, positions and secures workpieces at each station and performs series of machining operations, such as drilling, boring, tapping and milling on metal workpieces, such as castings and forgings: Lifts workpiece manually or with hoist and places it in clamping device on roller conveyor that transfers it to first work station, automatically indexing each workpiece at each station in transfer machine. Inspects machined workpieces for surface defects and spot-checks them for conformance to specifications, using measuring gauges and fixtures. Changes tools, using wrenches, when panel lights indicate that tool is worn or broken. Notifies supervisor if panel lights indicate machine failure or serious malfunction.

8315-202 BARREL RIFLER(metal fab., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Cuts spiral grooves into bores of small arms weapons, using broaching machine: Installs broach in drawing head and barrel in index head of broaching machine. Starts machine and opens valve to regulate automatic feed of broach and to cut rifling to specified depth and twist. Changes graduated broaching blades for each cut to attain specified depth of rifling. Cleans bore, using cleaning rod and fabric patch, and examines bore for burrs and scratches, using magnifying glass.

8315-206 ELECTRICAL-DISCHARGE-MACHINE TENDER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4 7

Tends electrical-discharge machine to shape metal workpieces to specifications, using electrical-arc-erosion principle: Reads job order or receives verbal instructions on quantity of workpieces to be produced. Positions and secures workpiece on machine table or places it in fixture. Moves controls to align electrode and workpiece. Starts machine, turns on flow of dielectric coolant and observes operation. Inspects work visually and with measuring instruments for conformance to specifications.

8315-210 GEAR-CUTTING-MACHINE TENDER(mach., weld. & forg.) DPT:685
production-gear cutter.
GED: 2 SVP: 3 EC: I 5 6 PA: M 4 7

Tends one or more previously set-up gear-cutting machines, such as gear shapers, hobbers and generators, to machine splines, sprockets or gear teeth in metal blanks: Positions and secures workpiece on arbor or in chuck or fixture. Starts machine and flow of coolant and observes cutting operation. Indexes machine to cut successive teeth or splines. Verifies conformance of machined workpiece to specifications, using measuring instruments, such as fixed gauges, micrometers or preset dial indicators. Cleans machines and separates coolant from metal shavings, using electric separator. Cleans machined parts in solvent and deburrs parts, using hand file or power grinder. Informs set-up man if workpieces do not conform to specifications. May machine plastic and other non-metallic materials.

8315-214 LAPPING-MACHINE TENDER, PRODUCTION
(mach., weld. & forg.) DPT:685
production-lapping-machine tender.
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Tends one or more lapping machines to lap surfaces of metal objects to specifications, usually on production basis:
Starts machine and places workpieces in machine. Moves controls to adjust lapping speeds, tool pressure and length of machine cycle. Observes operation and measures lapped workpieces for conformance to specifications, using equipment, such as comparator and surface plate.
May assist in setting up machine. May be designated according to material used, product made or type of machine operated.

8315-218 LAP-TRUING-MACHINE TENDER(scient. & ind. equip., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4 7

Tends machine that cuts specified curvature on metal laps used to grind and polish lenses:
Compares laps, using template, to determine if lap conforms to specifications. Clamps template on bed of machine and sets specified dioptic curve and depth of cut on vernier scale, to regulate feed of cutting tool. Clamps lap in machine chuck, starts machine and engages automatic feed or turns hand wheel to move lap across cutter. Repeats cutting process until lap is shaped to specified contour. Removes lap from turning machine at end of cycle and clamps it in chuck of scoring machine. Pulls scoring wheel across face of lap to cut grooves which retain abrasive on surface of lap during lens polishing operation. Stamps identification number on lap with hammer and marking die. Sharpens cutting tool on powder grinder.

8315-222 PLASTIC SAWYER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: M 4 7

Operates power-driven circular or band saw to cut plastic or similar materials to specified dimensions:
Installs blade and sets guide bars and stops, using hand tools. Positions material on saw table. Starts saw and feeds material to blade. Checks dimensions of cut pieces, using gauges, template or rule. Examines pieces for defects, such as chipped edges and marred surfaces, and sorts damaged pieces according to defects.
May mark cutting lines on material.

8315-226 SCREW-MACHINE TENDER, PRODUCTION
(mach., weld. & forg.) DPT:685
automatic-screw-machine tender.
GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends one or more previously set-up single- or multiple-spindle- screw machines, equipped with automatic indexing and feeding mechanisms to perform series of machining operations on bar stock, on production basis:
Loads bar stock into feeding mechanism. Starts machine, engages feeds and observes operation. Changes worn cutting tools, using wrenches. Verifies conformance of sample workpieces to specifications, using instruments, such as preset comparator, fixed gauges, calipers and micrometer. Moves controls to adjust machine operation.
May sharpen tools, using bench grinder. May machine plastics or other non-metallic materials. May be experienced in machining particular material or product, or in using particular type of machine and be designated accordingly.

8315-230 SCRIBING-MACHINE TENDER(metal fab., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4 7

Tends machine that cuts graduations in metal surface of measuring tools, such as carpenters' steel squares, and rules, and machinists' scales:
Reads work order and selects and installs cutter head, using wrench. Positions workpiece against locating pins on magnetic plate on machine carriage. Starts machine that cuts graduations along length of tool by automatic indexing of multiple scribing diamond points mounted in head. Removes scribed rule at end of cycle and examines

and compares it with master scale to verify legibility and accuracy of graduations. Checks measuring tool for smoothness by feeling along graduations for burrs. Selects appropriate head and repeats process to scribe opposite side of measuring tool.

8315-234 BLADE SHARPENER(metal fab., n.e.c.) DPT: 685
GED: 2 SVP: 2 EC: I 5 6 PA: M 4 7

Tends machine that grinds blades of articles, such as machine knives and hand tools:
Positions and fastens blades in holding fixture or magnetic chuck. Starts machine that automatically feeds blades to abrasive wheel or belt and sharpens blade edge. Verifies dimensions of blades and keenness of blade edges, using fixed gauges, micrometer and ruler.
May replace grinding wheels on machine, using wrenches.

8315-299 OTHER MACHINE-TOOL OPERATING OCCUPATIONS

This group includes other machine-tool operating and tending occupations, not elsewhere classified; for example, those who may operate or tend machine-tools to machine special products of metal or other materials where the methods applied to machining of metal are used. Typical examples of occupational titles covered by this residual group are:
Grinder, Neoprene-Fishing-Rod Handles(sport. & toy)
Shotgun-Bore Reamer(metal fab., n.e.c.)

8316-INSPECTING AND TESTING OCCUPATIONS, METAL MACHINING

This unit group includes occupations in inspecting and testing work as described under the term titles, 02-170 INSPECTOR (any ind.) and 02-430 TESTER (any ind.), concerned with quality control activities in metal machining.

8316-110 INSPECTOR, TOOL AND GAUGE(mach., weld. & forg.) DPT:221
gauge checker; tool and die inspector.
GED: 4 SVP: 7 EC: I PA: M 4 7

Inspects, tests and adjusts new, reworked or in-use dies and tools, such as gauges, jigs, fixtures, measuring instruments and testing equipment for conformance to specifications:
Calibrates and adjusts gauges and measuring instruments, such as dial indicators, fixed gauges, height gauges and electrical and functional gauges, using master gauges and master parts. Examines tools, gauges or measuring instruments to determine wear and required adjustments. Disassembles inaccurate or worn tools, gauges and measuring instruments, using hand tools, and inspects parts for wear, warping or other defects. Studies defective parts to determine cause of defect and recommends corrective action. Prepares report listing defects and other inspection data. Reassembles tools and gauges and adjusts to specifications. Tests units for fit of moving parts and mechanical functioning. Instructs inspection personnel in setup and operation of measuring equipment.
May record history, calibration, location and condition of all measuring equipment.

8316-114 INSPECTOR, MACHINE SHOP(mach., weld. & forg.) DPT:281
GED: 4 SVP: 7 EC: I 5 PA: M 4 7

Tests and examines machinery parts, materials and assemblies at assembly, inspection and machining stations to ensure conformance to drawings and other specifications:
Analyzes drawings and other specifications to obtain product information. Examines parts, materials and assemblies visually for surface defects, finish and completeness. Checks dimensional accuracy of machined parts, using micrometers, calipers, vernier height gauge, dial indicator, plug gauges or comparator. Tests operation of mechanical assemblies, using equipment, such as push-off testers and torque gauges. Informs foreman or quality control personnel when product fails to meet standards. Writes report indicating types of

defects and percentage of rejects. Inspects first run parts to confirm machine setups. May lay out measuring reference lines on workpiece. May set up, adjust and test inspection equipment to ensure its accuracy. May be identified according to manufacturing process, type of product or item inspected.

8316-118 GEAR INSPECTOR(mach., weld. & forg.) DPT:381
GED: 4 SVP: 7 EC: I PA: M 4 7

Measures shape and dimensions and inspects finish of various types of gears, using gear-testing machines:
Positions gear on machine arbor or meshes it with master gear. Sets dial indicator on machine to zero and connects recording chart to machine. Turns handle to position measuring tip of dial indicator against gear. Measures curvature of gear tooth, distance between gear teeth and concentricity of gear by taking specified number of dial indicator readings. Compares dial indicator and recording chart readings with dimensions and tolerances specified in drawings to determine if gears are in conformance with specifications. Measures overall size of gear, using micrometer and gear-measuring wires. Records defects in gears tested and recommends action to correct machining defects.

8316-122 PROPELLER INSPECTOR(ship & boat bldg.) DPT:381
GED: 4 SVP: 6 EC: I PA: M 4 7

Examines ships propellers for conformance to specifications and to detect machining, chipping, grinding and polishing defects:
Reads mechanical drawings and other specifications to obtain product information. Inspects pattern from which propeller mould is made for surface defects and completeness. Sets up, adjusts and tests inspection equipment to ensure its accuracy. Verifies dimensional accuracy of propellers, using micrometers, calipers, vernier height gauges and plug gauges. Verifies setup of machine tools used to machine propellers. Measures pitch and balance of propeller blades, using pitchometer. Records data and returns defective propellers for regrinding, welding or other machining necessary for adjustment or reconditioning.

8316-126 DIFFERENTIAL-GEAR TESTER(motor vehicle) DPT:382
GED: 3 SVP: 5 EC: I 5 PA: M 4 6 7

Operates machine to test performance and mesh of crown and pinion gears in assembled automobile or truck differentials:
Clamps differential in fixture. Adjusts gear backlash and tooth-contact pattern to specifications by turning bearing carriers. Verifies setting, using indicator gauges. Paints gears with mixture of red lead and oil to indicate high spots. Starts machine and runs gears at various speeds, observes their operation and listens to sound to detect indications of defective meshing. Stops machine and inspects gears for signs of defective meshing. Locks bearing-retaining bolts to specified torque setting, using impact wrench, when gears meet standards. Rejects gears that do not perform according to standards, and records test results.

8316-130 GEAR TESTER(mach., weld. & forg.; motor vehicle) DPT:685
GED: 3 SVP: 4 EC: I PA: L 4 6 7

Tends gear-testing machine to test accuracy of mesh of finished transmission gears:
Mounts gear on spindle, installs spindle in machine, and moves lever to mesh gear with master gear. Starts machine to rotate meshed gears, applies brake to load spindle, and observes operation and listens for noises that indicate defective meshing. Tests gear teeth for correct shape by spraying red-lead on teeth of gear to indicate high spots. Removes high spots from gear teeth by filing or grinding.

8316-199 OTHER INSPECTING AND TESTING OCCUPATIONS, METAL MACHINING

This group includes metal machining inspectors and testers, not elsewhere classified; for example, those who verify alignment, dimensions and finish of threads cut in pipe fittings, such as tees and elbows, using alignment table and standard test bars. A typical

example of an occupational title covered by this residual group definition is:
Thread Alignment Tester. Pipe Fittings(mach., weld. & forg.)

8319-METAL MACHINING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with machining metal, plastic or similar materials, to produce or repair parts or products.

8319-110 PLASTIC-TOOL MAKER(mach., weld. & forg.) DPT:681
GED: 4 SVP: 6 EC: I 7 PA: M 4 7

Lays out and assembles plastic tools, such as gauges, jigs, templates, and fixtures:
Makes tool assemblies by laminating them with glass cloth and resin and shapes them by sawing, filing and sanding. Determines from drawings, location of guide and reference lines and location of holes on plastic tools. Locates and marks lines and holes on tools, using calipers, rulers, micrometers and protractors. Drills holes in tools, using drill press. Inserts bushings or pins into holes, using arbour press or hammer. Verifies dimensions and alignment of assembly, using calipers, straight edge, height gauges and sight level. Trims excess material from tool parts, using files and power grinder. Fills space between adjoining parts with plastic.

8319-114 PLASTIC-FIXTURE BUILDER(mach., weld. & forg.) DPT:681
GED: 3 SVP: 6 EC: I 7 PA: M 4 7

Makes precision plastic checking fixture used to determine accuracy of formed metal parts:
Casts or lays-up plastic reproduction from model of part. Lays out lines on casting or built-up workpiece as references for trimming, fitting and assembling operations, using surface plate, height gauges and other measuring instruments. Cuts and trims workpiece following reference lines, using saws, files and other hand tools. Assembles fixture with glue, epoxy resin, acetone, bolts or other fasteners. Fits and fastens metal inserts into fixture at specified locations to increase strength and accuracy. Verifies dimensions of completed checking-fixture for conformance to specifications, using templates and measuring instruments.
May fabricate metal inserts used in fixture, using powered saw, drill, grinder and hand files.

8319-118 SCRAPER, HAND(mach., weld. & forg.) DPT:681
GED: 3 SVP: 6 EC: I PA: M 4 7

Scrapes metal workpieces with hand tools to smooth machine ways, bearing surfaces and surface plates to ensure uniform and even surfaces and free action of parts:
Positions workpiece on worktable, in vise or in fixture and secures it with clamps and wrenches. Files and grinds burrs from workpiece. Applies marking pigment to surface plate with brush, cloth or sponge. Positions workpiece and master surface plate against each other and rubs surfaces together to mark high spots. Selects hand scraper and scrapes workpiece surface to remove high spots indicated by pigment pattern. Repeats operation until pigment pattern is even over whole work surface. Checks workpiece for conformity to specifications, using instruments such as dial indicator, height gauge, master surface plate and gauge blocks.
May use power-operated hand scraper.

8319-122 BABBITTER(mach., weld. & forg.) DPT:681
GED: 3 SVP: 5 EC: I 6 PA: M 4 7

Lines bearing surfaces of machinery with babbitt, and fits bearings to component parts:
Selects mandrel according to finished size of bearing taking into consideration allowances for machining and scraping or according to work orders. Aligns and centers mandrel in bearing and seals openings with clay or asbestos to prevent molten metal from leaking. Fits separators in split bearings, using sheet asbestos packing or similar material and tin snips, and bolts or clamps the bearing halves together. Melts metal in pot or ladle. Positions workpiece in fixture and heats

with torch. Pours molten metal from ladle or pot into workpiece assembly. Fits babbitted sections to other bearing surfaces, using machine tools, hand scrapers and micrometers, allowing specific clearance between mating parts. Drills oil holes and cuts oil grooves into babbitted bearing surfaces. Installs babbitted parts in machinery and tests for operation.

May dip workpiece in acid bath, and molten tin to coat surface preparatory to babbiting.

8319-126 FILER, HAND(mach., weld. & forg.) DPT:681
precision filer, hand.
GED: 3 SVP: 5 EC: 1 PA: M 4 7

Files grooved, contoured, and irregular surfaces of metal objects, such as metalworking tools and dies and machine parts, to conform to templates, other parts or specifications:

Studies drawing or layout on workpiece and selects files according to type of metal, size and shape of work and amount of metal to be removed. Files workpiece surface to lay-out lines. Inspects with magnifying glass and verifies conformity of finished workpiece by comparing it with template or other part, or by measuring dimensions, using instruments, such as vernier calipers, micrometers and surface gauges. Smooths and polishes workpiece with emery cloth or power buffer, and feels surface with fingers for smoothness. Tests workpiece functionally by assembling with other parts and operating machine. May specialize according to product filed.

8319-130 LAPPER, HAND(mach., weld. & forg.) DPT:681
precision lapper.
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Laps metal workpieces such as gauges and machine parts, to specifications within very fine tolerances, applying knowledge of abrasives, metals and lapping procedures:

Measures workpiece with instrument such as comparator. Compares workpiece dimensions with specifications to ascertain amount of stock to be removed. Mounts workpiece in fixture using wrenches and keys and work aids, such as parallel bars and rods to guide motion of lap or workpiece. Files grooves in surface of lap to hold abrasive lapping compound. Applies compound to workpiece and rubs lap across workpiece with rotary or reciprocating motion, feeling friction and applying required pressure to attain specified tolerance. May be designated according to product lapped; for example, Lapper, Gauges

8319-134 SMOKING-PIPE REPAIRMAN(misc. prod. fab., n.e.c.) DPT:681
GED: 3 SVP: 5 EC: 1 6 PA: L 4 7

Repairs smoking pipes and cigar holders, according to customers' specifications, using lathe and other hand and power tools:

Cuts mouthpiece blank from block of hard rubber or plastic, using hand saw. Secures mouthpiece blank in lathe chuck and guides tools against revolving blank or holds blank in hands to guide blank against revolving drills and counterbores to drill and ream air hole. Turns end of blank to fit pipe or holder. Presses blank against grinding and buffing wheel to shape mouthpiece according to customer's specifications. Cuts threads on stem or pipe shank, using tap and die or thread chasers and lathe. Heats pipe stem over flame or in hot oil to bend stem to specified angle or shape. Repairs broken or cracked pipe shanks with cement, silver bands, ferrules or screws. Buffs pipe bowl and stem to restore high gloss.

8319-138 PISTON AND VALVE MAKER(misc. prod. fab., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 6 PA: L 4 7

Operates machine tools such as lathe, drill press, saw and lapping machine to make, fit and assemble parts for pistons, valves and slide joints of brass wind instruments, performing any combination of the following duties:

Cuts crooks (curved tubes) to length, using sheet metal snips or table saw. Expands crooks to size of hole in piston blank in which they are to be inserted, using ball end of mandrel or hand tool. Operates lathe to face and bevel piston ends and to smooth external surface of piston. Operates drill press to drill holes in piston valves and connecting tubes. Taps hole in piston head, threads end of piston shaft, and assembles shaft and piston. Solders crooks into piston holes and bottom plate onto piston, using hand torch and silver solder. Inserts and soft solders

connecting tubes and braces between valves. Wires valves together in position, using pliers. Solders tubes and braces to valves, using silver solder. Operates lapping machine to lap pistons and valves together. Cleans excess solder from joints and deburrs inside of valve, using files, scraping tool and abrasive paper. Matches valves and pistons, and punches corresponding numbers on them for correct assembly.

8319-142 SAW-EDGE FUSER(mach., weld. & forg.; metal fab., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 5 6 PA: M 4 7

Operates machine-tools and induction furnace to machine and fuse specially tipped circular-saw blades:

Reads work order and other job specifications. Weighs tungsten carbide and sintering powders, such as nickel and iron, and industrial diamond chips in specified percentages, using jewellers' scale. Dumps powders into small mixing mill and mixes them for specified time. Mixes diamond chips with sintering powder as required. Compacts mixture in moulds, using arbor press, to form saw segments. Places segments in oven, at preset temperature and under inert atmospheric conditions, to sinter mixture. Operates machine-tools, such as grinder, lathe, and milling machine to finish edge of saw blank to specifications. Fuses segments to saw blank, using flux, brazing strips and furnace. Measures saw with micrometer, and dial gauge to check thickness and runout.

8319-146 SAW MAKER(mach., weld. & forg.; metal fab., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 5 6 PA: M 4 7

Makes blades for band-saws, circular saws and jigsaws from steel blanks and strips, according to specifications, using machine and hand tools:

Selects steel-saw-blade material according to size, type and operating requirements of blade. Operates power roller to straighten and stretch (roll) blade to specific temper. Installs specified serrating dies in punch press and operates press or milling machine to cut teeth in blade. Sharpens and sets blade teeth, using power grinder and setting machine. Verifies saw blades for conformance to specifications, using micrometer and other measuring instruments.

May operate surface grinder to grind circular-saw blanks to specified thickness. May heat treat saws to relieve internal stress and temper metal. May operate resistance butt-welding machine to join ends of band-saw blades.

8319-150 SAW REPAIRMAN(mach., weld. & forg.) DPT:682
saw filer.
GED: 3 SVP: 5 EC: 1 5 6 PA: L 4 7

Repairs, sets and sharpens band-saw, chain-saw, handsaw, circular saw and other types of saw blades according to specifications, using hand tools, filing machine and welding equipment:

Examines saw blade for defects. Cuts broken teeth from saw, using power shear. Replaces teeth on blade by beveling joints on grinder and brazing or welding new teeth to blade, using welding equipment. Brazes or welds cracks in saw blades. Straightens twists and kinks in blades, using press or hammer. Adjusts cutting widths of blades by setting teeth, using special tools. Clamps blade in saw-filing machine and adjusts machine for distance between teeth, angle of bevel and depth of cut of file or abrasive wheel to match that of saw being repaired or sharpened. Starts machine that automatically grinds or files saw teeth.

May file and set individual saw teeth by hand, using file and setting tool.

8319-154 MOULD FINISHER(mach., weld. & forg.) DPT:684
GED: 3 SVP: 5 EC: 1 5 6 PA: M 4 7

Manipulates powered-hand grinder and hand tools to shape and smooth metal mould surfaces:

Lifts partially completed mould by hand or with hoist, and positions and secures it in holding fixture. Removes burrs and smooths contoured surfaces, using powered-hand grinder. Chips mould surface to sharpen impression, using hammer and hand tools. Verifies contour of impression with templates. Fits and installs nameplate in mould, using hand tools. Inserts preformed metal tabs into slots in mould, verifies height of each insert with preset dial indicator and hammers mould metal around inserts with pneumatic hammer to secure them.

Scrapes, sands and polishes moulds to shape and smooth surfaces, using hand tools.

8319-158 TRIM-MACHINE ADJUSTER(explosives) DPT:380
GED: 3 SVP: 4 EC: I 5 PA: M 3 4 7

Sets up machines that trim small-arms cartridge cases to specified length:

Installs cutters and adjusts stops and cams to regulate machine stroke and synchronize movements of feeding, cutting and ejection mechanisms according to work orders and set-up charts, using hand tools. Sharpens cutters and polishes scratched punches, using bench grinder, speed lathe and emery cloth. Gauges samples of cases to ensure conformance to established standards. Removes housings, guards, feed tubes, chutes, tool holders and other accessories to replace worn or broken parts, such as springs, bushings and push-rods, using hand tools. Straightens bent punches and machine parts, using hammer and anvil.

8319-162 CARBON SALVAGE MAN(mach., weld. & forg.) DPT:482

GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates band-saw and engine lathe to salvage defective or damaged carbon or graphite stock:

Examines and measures defective stock to determine standard sizes of stock that may be obtained after cracks, burns or other defects are removed. Positions carbon or graphite stock on band-saw table manually or with hoist. Adjusts height of saw-blade guides according to thickness of stock. Starts band-saw and guides stock into saw to make smaller size stock, allowing enough material for machining to standard sizes. Positions and secures sawn workpieces in chuck of engine lathe. Installs and adjusts cutting-tool bits, adjusts depth of cut, speed and feed by turning handwheels and moving levers. Starts lathe and turns down diameter and faces ends of workpiece until defects are removed and smaller product of standard size is obtained.

8319-164 CONTACT-LENS CUTTER(scient. & ind. equip., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I PA: S 4 7

Operates jewellers' lathe to cut contact lens-blanks to specified diameters:

Presses double-faced adhesive tape into depressions of blocking laps (metal pegs used to hold lens-blanks), using holding jig and rounded smoothing tool, and cuts tape, using knife. Positions lens-blank and taped laps in blocking device, and presses plunger to center and fasten lens-blank to tape on laps. Mounts blocked lens-blank in chuck of jewellers' lathe. Turns crank and observes gauge to set cutting tool for specified diameter. Starts lathe and turns handle to feed cutting tool into lens-blank. Removes cut lens-blank from lathe and smooths burrs, using emery cloth. Places laps in solvent to remove tape residue before re-use.

8319-165 CONTACT-LENS-LATHE OPERATOR(scient. & ind. equip., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I PA: S 4 7

Operates jewellers' lathe to machine contact lenses from plastic lens blanks:

Positions and fastens plastic blank in holding chuck of lathe. Adjusts cutting tool mechanism for specified radius or inside or outside curved surface and depth of cut. Starts lathe and turns crank to advance cutting tool to workpiece. Pulls control arm to move cutting tool across face of lens. Removes lens from chuck and examines it for smoothness of machined surface. Measures lens with thickness gauge and calipers to verify compliance with specifications. Tapes finished lens to work order and places in routing container.

8319-166 SCARFING-AND-BORING-MACHINE OPERATOR(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 5 6 PA: H 3 4 7

Operates portable pneumatic-scarfing machine to scarf and bore tube ends that cannot be machined in an ordinary lathe:

Reads drawings or job order for dimensions and style of scarfing required. Selects cutters and checks them for sharpness. Installs and adjusts cutters to size and shape required, using wrench and keys.

Makes trial run on test piece before starting production run. Clamps end of tube into machine holding fixture. Advances rotating cutting head to scarf and bore tubes by moving lever. Verifies conformance of scarfed and bored tubes, using fixed gauges, calipers or micrometers. Installs and removes finished workpieces from machine, using overhead hoist.

8319-170 SERRATING-MACHINE OPERATOR(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates chiseling machine that serrates bevelled-cutting edges on harvesting machine knife sections:

Sets and clamps serrating tool into reciprocating arm, using hand tools and pre-set markings. Synchronizes and adjusts travel of reciprocating arms according to size of knife section to be serrated. Pushes button to start machine. Loads knife sections onto machine feeding table and clamps sections in place, co-ordinating hand movements with speed and action of machine. Observes chiseling operation of machine and checks evenness and depth of serrations, and cutting angle. Places serrated knife sections in tote box or bin for further processing by other workers. Operates grinder to sharpen serrating machine chisels. May set up and operate automatic serrating machines.

8319-174 BALANCER, WATCH-BALANCE WHEEL(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I PA: S 4 7

Equilibrates mass of watch balance wheel around balance wheel staff, using poising machine and jewellers lathe:

Mounts balance wheel and staff, using tweezers, in holding fixture of poising machine. Observes rotation of wheel to determine if heavy portion exists and is drawn to bottom. Starts jewellers' lathe to drill metal from head of balance screw in heavy part of wheel, estimating amount to be removed and adjusting lathe feed to remove required amount. Repeats operation until even rotation of wheel indicates balance.

8319-178 DEBURRER(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: I PA: L 4 7

Removes burrs and excess metal from machined watchparts and stamped or hand-cast clock-wheel parts:

Manipulates deburring tools and hand scrapers to remove burrs from rims, edges and recesses of watch parts, such as pillar plates and barrel bridges. Manipulates files or small portable trimming machines to remove excess metal from clock gears and wheel parts, or cleans lead from hand cast clock wheel parts, using hand pick. Inspects parts with loupe to ensure removal of burrs.

8319-180 CARBIDE-TOOL WORKER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 4 EC: I 6 PA: L 4 7

Performs one or more of the following repetitive duties in manufacturing tungsten-carbide-tipped tools:

Tends metal-sawing machines such as band saws and circular saws to cut metal bar stock to specified dimensions. Sandblasts metal parts in sandblast cabinet to clean parts in preparation for brazing to tungsten-carbide tips. Loads and unloads rotary tumbler to coat tool-tip inserts with copper powder. Places inserts in boats and loads them into coppering furnace to coat inserts. Tends furnace during heat-treat and coating process and unloads furnace after treating. Transfers inserts from boats to trays for further processing. Feeds, tends and off-bears grinding machine to grind carbide inserts. Tends milling machine to mill surfaces of tool holders to receive carbide inserts. Dip-paints tool holders by hand and places them on magnetic board to dry. Etches trade mark, grade and style on tool holder or insert, using electrolytic etching machine.

8319-184 PIPE CUTTER, MACHINE(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: I PA: H 3 4

Tends pipe-cutting machine to cut various sizes of pipe to required length:

Reads job order to determine size, quantity and length of pipe required. Measures and marks specified length on initial piece of pipe

and places pipe in machine to set machine gauges and stops, using hand tools. Manipulates lever controlling cutters to cut pipes to length. Lubricates large diameter pipe during cutting operation. Completes job order by recording number of pieces cut and man-hours used. Replaces worn cutters in machine, using hand tools. May remove burrs from cut ends of pipe, using portable grinder.

8319-186 TRIM-MACHINE TENDER(explosives) DPT:685
shell-trim operator.
GED: 2 SVP: 3 EC: I 5 PA: M 4

Tends battery of machines that trim small-arms cartridge cases, and bullet jacket blanks to specified length: Fills hopper of machine with small arms cartridge cases or bullet jacket blanks. Adjusts chuck and feed punch to cut blanks to specified length, by turning stop nuts and setscrews, using hand tools. Starts machine and observes operation of feeding, cutting and ejection mechanisms to detect malfunction. Removes jammed pieces, using fingers or wire hook. Examines trimmed workpieces for defects such as dents, burrs or scratches. Verifies workpieces for conformity to specified dimensions, using fixed gauges. Sharpens cutters on bench grinder. May seat artillery-shell cases on rotating mandrel and trim them by holding circular-cutting tool against shell mouth or turning wheel of carriage cross-feed.

8319-190 BUTTON FINISHER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: I PA: S 4 7

Drills holes and grinds flat surfaces of plastic buttons, using bench drill and grinding machine: Determines position and spacing of holes by examining sample button. Inserts specified drill in drill chuck. Places button against guide and presses button against rotating drill bit to form hole. Inserts button blanks in slot of grinding machine and pulls grinder against button to grind flat surfaces. May tend machine that crimps metal eyelets into buttons.

8319-194 DRILLER, PORTABLE DRILL(mach., weld. & forg.) DPT:684
GED: 2 SVP: 2 EC: B 5 6 PA: M 4 7

Drills rivet or bolt holes in materials, such as metal, wood or plastic, on production basis, following lay-out marks and using portable drill: Punches indentations along lay-out marks to guide drill bit, using center punch and hammer. Fastens specified bit in chuck of drill and drills holes in workpiece. Sharpens drill bits, using electric grinder. Replaces drill bit with reamer, tap, or countersink to enlarge, thread, or countersink holes. Realignment off-center holes in structural members, using drift pins. May bolt members together, using wrench.

8319-198 EYEGLASS-FRAME CUTTER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: I 5 6 7 PA: L 4 7

Grooves and shapes eyeglass plastic-frames, using rotary-spindle cutting tool: Places and clamps frame in fixture. Starts machine and guides fixture around rotary cutter to cut groove in frame. Places frame in jig to heat bridge area and presses heated frame over other jig to shape to specified contour. Manipulates bridge area of frame against cutter to shape it to specified angle for fitting nose pads. Selects and changes cutting tool in machine, using hand tools.

8319-202 KEY CUTTER(metal fab., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Cuts notches in key blanks to duplicate notches of original key, using key-duplicating machine: Selects key blank according to size, shape, grooves or code number of original key. Positions original key and blank in vises on carriage of machine and against guides. Turns thumbscrews to secure key and blank in vises. Starts cutting disk of machine. Pushes and pulls

horizontally moving carriage of machine to slide notched edge of original key against stationary guide on machine and to move key blank against cutting disk, duplicating notches of original key in blank. Removes keys from vises, and presses new key against revolving wire wheel to remove burrs. Verifies notches of new key by positioning it against original key.

8319-206 MACHINE SHOP HELPER(mach., weld. & forg.) DPT:684
GED: 2 SVP: 3 EC: I 5 6 PA: M 3 4

Helps machine shop personnel by performing any combination of routine machine shop duties: Helps machine-tool operators lift and position heavy and awkward workpieces and machine accessories onto machines, using chain hoists. Shovels metal chips into separate containers to salvage brass and dispose of ferrous metal. Files burrs from metal parts, such as gears and valves, and washes parts in solvent to remove oil, dirt and metal chips. Lap-fits assemblies, such as ball-and-socket joints and valves, by spreading lapping compound on parts and working mating surfaces of parts together. Reclaims cutting and lubricating oils from machines by pumping oil from machine reservoir into barrel, dumping oil from barrel into centrifugal separator that removes metal chips and dirt from oil and draining clean oil from separator into containers. Moves workpieces from station to station. Sorts pieces of metal stock or finished parts and places them in specified bins or packs parts in boxes. Etches identification numbers on tools, using electric needle. Cleans work areas and empties waste receptacles. See also definition for term title, 02-160 HELPER (any ind.).

8319-210 SMOKING-PIPE-BIT FINISHER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: I 6 7 PA: L 4 7

Drills, shaves and smooths mouthpieces of plastic and hard rubber smoking-pipe bits: Positions bit in holding device on drill press. Drills hard rubber or plastic bit to required size. Places bit and fitment into fixture and activates foot pedal that forces fitment into end of bit. Manipulates bit against sander or revolving blade to remove excess material. Sands pipe shank and bit to make even joint. May use holding device to hold bit during smoothing or shaving processes.

8319-214 BUTTON MAKER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 7 PA: L 4 7

Tends battery of machines that cut off non-metallic button blanks, and shape, trim, drill, and decorate faces of blanks, by working as a member of a crew, and performing any combination of the following duties:

Positions plastic rod in abrasive-type circular saw and pulls lever to move saw through rod to cut off button blanks. Advances rod manually for each successive cut. Washes and dries blanks in cold water and spin drier or tumbler. Loads button blanks into machine hopper, using hand scoop. Starts automatic machine, by pressing switch, and observes blanks feeding into rotating chucks on mechanism that conveys blanks to cutting tools and drills. Removes jammed blanks from feed chute, using wire pick. Stops machine and notifies repairman in case of malfunction. Empties hopper into larger container when full and repositions hopper under discharge opening of machine. Removes and replaces worn cutters and drills, using wrenches.

8319-299 OTHER METAL MACHINING OCCUPATIONS

This group includes metal-machining occupations, not elsewhere classified, for example, those who set up or operate special types of machine-tools, machine special products or tend automatic-tape-controlled machines. Typical examples of occupational titles covered by this residual group definition are:

Cam Maker(mach., weld. & forg.)
Machining Center Operator, Vertical(mach., weld. & forg.)
Racker and Threading-Machine Feeder, Drill Pipe(mach., weld. & forg.)
Reamer, Hand(mach., weld. & forg.)
Slotter Operator(mach., weld. & forg.)

833-METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING

This minor group includes occupations concerned with shaping, forming and joining metal parts or products to specified dimensions by forging, pressing, cutting, bending, punching and shearing, and joining by welding, brazing and soldering. Activities include: measuring, laying out and setting up work and machines; and associated fitting and repairing. Boiler making, erecting and repairing occupations are included in this minor group. These occupations are classified in the following unit groups:

- 8330** Foremen, Metal Shaping and Forming Occupations, Except Machining
- 8331** Forging Occupations
- 8333** Sheet Metal Workers
- 8334** Metalworking-Machine Operators, n.e.c.
- 8335** Welding and Flame Cutting Occupations
- 8336** Inspecting and Testing Occupations: Metal Shaping and Forming, Except Machining
- 8337** Boilermakers, Platers and Structural Metal Workers
- 8339** Metal Shaping and Forming Occupations, Except Machining, n.e.c.

8330-FOREMEN, METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING

This unit group includes occupations as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in shaping and forming metal parts and products by forging, flame cutting, shearing, rolling, pressing, bending and punching; and joining and repairing metal parts by welding, brazing and soldering.

8330-110 FOREMAN, BOILERMAKERS, PLATERS AND STRUCTURAL METAL WORKERS(struct., plate & ornam. metal) DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating, assembling, erecting and repairing boilers and pressure vessels; and fabricating and assembling parts in shops for storage tanks, vats, ships and other structures made from steel plates, tubes, beams, castings and similar materials, (Unit Group 8337): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a particular activity or fabricating a particular product and be designated accordingly; for example, Foreman, Boilermaker
Foreman, Boiler-Repair
Foreman, Plate-Shop
Foreman, Structural Steel Shop

8330-114 FOREMAN, FORGING OCCUPATIONS(mach., weld. & forg.) DPT:138

Supervises and co-ordinates activities of workers engaged in shaping and forming metal parts by hammering, pressing, swaging and drop-forging metal into desired shapes, with or without benefit of heat, (Unit Group 8331): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a particular activity and be designated accordingly; for example, Foreman, Forge Shop
Foreman, Hot-Wound Springs
Foreman, Spikemaking

8330-118 FOREMAN, METALWORKING-MACHINE OPERATORS, N.E.C.(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in setting up and operating power machines to produce metal parts and products; such as, tinware, furniture, doors, light structural frames and appliance cabinets, usually on a production basis, from sheet-metal, tubing and wire and bar stock, (Unit Group 8334): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a particular activity and be designated accordingly, Foreman, Forming Rolls

8330-122 FOREMAN, SHEET-METAL WORKERS(metal stamp., press. & coat.) DPT:138

Supervises and co-ordinates activities of workers engaged in making and repairing sheet-metal parts or products; such as, ducts, hoods, vents, louvers, signs and restaurant equipment, (Unit Group 8333): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a particular activity or in producing a particular sheet-metal product and be designated accordingly; for example, Foreman, Coppersmiths
Foreman, Duct Worker

8330-126 FOREMAN, WELDING AND FLAME CUTTING OCCUPATIONS(mach., weld. & forg.) DPT:138

Supervises and co-ordinates activities of workers engaged in joining, surfacing, cutting or otherwise fabricating and repairing ferrous and non-ferrous metal parts and structures, using welding, brazing, soldering, lead burning and cutting equipment, (Unit Group 8335): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a particular activity and be designated accordingly; for example, Foreman, Lead Burning
Foreman, Welder
Headwelder, Electric-Welding Pipe Mill

8330-199 OTHER FOREMEN: METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING

This group includes foremen, not elsewhere classified, concerned with metal shaping and forming; for example those who supervise and co-ordinate activities of workers engaged in operating or tending metalworking machines to produce particular products; such as fences, springs and cutting implements; and those who supervise and co-ordinate activities of workers engaged in inspecting and testing metal shaping, forming and welding except machining. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Fence Making(wire prod.)
Foreman, Metal Shaping and Forming Inspectors(any ind.)
Foreman, Spring Making(metal fab., n.e.c.)

8331-FORGING OCCUPATIONS

This unit group includes occupations concerned with heating metal in a forge or furnace and forming it into desired shapes, using forging-hand tools, or by operating or tending powered-forging machines. Activities also include shaping metal without the benefit of heat.

8331-110 DIE SETTER(mach., weld. & forg.) DPT:380
forging-machine set-up man.
GED: 4 SVP: 7 EC: I 5 PA: H 3 4 7

Sets up forging machines, such as forging and coining presses, drop hammers, forging rolls and upsetters, using hand tools and measuring instruments:

Selects dies following drawings, work order and data-chart specifications. Positions, aligns and bolts specified dies to ram and anvil of presses and hammers, using hoist and hand tools. Installs impression and gripping dies and synchronizing cams on upsetting machines. Sets and bolts roll dies into self-positioning slots or dogs on roll shafts of forging rolls. Aligns and bolts positioning fixtures and stops, and synchronizes conveyor speed with forging machine action and heating cycle of furnace. Starts machine and inspects sample workpiece to verify conformance of die set-up to specifications. Transports dies from die storage area to machine area, using push cart.

May assist in making and assembling jigs used to fabricate special forged workpieces. May specialize in setting up certain forging machines and be designated accordingly,
Die Setter, Drop-Hammer

8331-114 BLACKSMITH(mach., weld. & forg.) DPT:361
anvilsmith.
GED: 3 SVP: 7 EC: I 3 5 6 7 PA: H 4 5 7

Forges and repairs variety of metal articles, such as tools, wrought iron fixtures, chains, agricultural implements and structural components:

Heats metal workpiece or stock in forge, using coke, coal, gas or electricity. Hammers, punches or cuts workpiece or metal stock into specified size and shape on anvil, using hammer, tongs, chisels, and measuring instruments. Forge-welds parts by heating, applying flux and hammering together. Devises jigs and fixtures, and forges special hand tools, such as hammers and chisels. Tempers, hardens or anneals forged articles by specified methods of heating and cooling in oil or water bath, or cooling gradually in air. Sharpens tools, using power grinder. Directs helper to hold forming tools or assist in lifting and holding workpiece during hammering.

May shape workpieces, using power hammer. May cut, assemble and weld metal parts, using arc or acetylene-welding equipment. May be designated according to specialty; for example,
Blacksmith, Farm

8331-118 POWER-HAMMER OPERATOR(mach., weld. & forg.) DPT:362
hammersmith; heavy forger.
GED: 3 SVP: 7 EC: I 3 5 6 7 PA: M 4 5 7

Operates power hammer or press equipped with open dies to forge heated metal stock:

Selects dies following work order diagram or specifications. Aligns and bolts dies into ram and anvil of machine, using scale, square, gauges and hand tools. Observes colour of metal in furnace to determine forging temperature, and pulls metal from furnace. Starts machine, regulates action of hammer or press and directs helper to position and turn metal on anvil of machine. Verifies dimensions of forging, using scale, gauges, templates and calipers.

May forge cold metal. May direct 8331-182 LEVERMAN (mach., weld. & forg.) to control power-hammer blows or ram pressure when forging large workpieces.

8331-122 DROP-HAMMER OPERATOR(mach., weld. & forg.) DPT:362
hammer man.
GED: 3 SVP: 6 EC: I 3 5 6 7 PA: H 3 4 7

Operates closed-die drop-hammer to forge metal parts:

Selects, aligns and bolts specified dies to ram and anvil of machine, following work order specifications and using scale, rule, square, feelers, shims and hand tools. Sets stops or trims handles to set specified striking force of ram. Heats specified quantity of workpieces in furnace until desired temperature has been reached. Positions workpiece on lower die and presses pedal, causing ram to strike metal repeatedly, forcing it to shape of die impressions. Moves workpiece through series of dies to obtain progressively finer detail. Trims flash from finished forging.

May turn knobs to regulate speed and feed of conveyor that automatically brings heated stock from furnace, places it near anvil, and carries off finished workpiece. May direct helper in manipulating materials under die to flatten, straighten, twist, form, draw, upset, split, cut or punch various shapes. May be designated according to type of hammer operated; for example,
Steam-Hammer Operator

8331-126 VEHICLE-SPRING REPAIRMAN(motor vehicle) DPT:384
GED: 3 SVP: 5 EC: I 3 5 6 PA: M 3 4 7

Repairs leaf-type springs used in automotive vehicles, using forging and shop equipment:

Raises automobile body, using jack, and removes defective spring using handtools. Separates defective leaves from spring, using wrench, hammer and chisel. Measures broken leaves, using ruler, and obtains replacement leaves from stock or cuts out replacement leaf blanks from steel stock, using flame cutter or power shear, and bevels ends using bench grinder. Drills or punches bolt holes in blanks, using drill or punch press. Places ends of main-leaf blank in furnace to soften ends and shapes ends of blank into eyes, using eye-forming tool. Reheats leaves and arches them to required specifications, using peen hammer. Quenches spring leaves in oil to temper them according to specifications. Places graphite- impregnated lining between leaves to prevent friction. Bolts and clips leaves together and forces bushings into spring eyes, using bushing press. Replaces spring in vehicle.

8331-130 FORGE-MANIPULATOR OPERATOR(mach., weld. & forg.) DPT:663
GED: 3 SVP: 5 EC: I 3 5 PA: L 4 5 6 7

Operates manipulator machine that moves metal stock from furnace and positions and turns it on anvil of forging press or hammer:

Moves levers and pedals to guide manipulator along floor, on overhead rails or on tracks to furnace. Grasps workpiece with jaws mounted on arm extending from manipulator cab, and conveys it to press or hammer. Moves lever controls of arm to turn and position workpiece on anvil or dies as it is being shaped, following verbal and hand signals of forger. Signals forger or hammer operator to actuate ram when forging is positioned on dies or anvil.

- 8331-134 IMPACT-HAMMER OPERATOR**(mach., weld. & forg.) DPT:682
dual-action-hammer operator.
 GED: 3 SVP: 5 EC: I 3 5 6 7 PA: H 4 7

Operates horizontal- or vertical-impact hammer that strikes metal simultaneously with two opposing rams to forge metal, suspended by fixture between rams:

Aligns and bolts specified dies on rams, using rule, square, shims, feelers and hand tools. Pulls workpiece from furnace, when colour of workpiece indicates forging temperature is reached, and positions and aligns workpiece in fixture, using hoist. Turns handles to regulate striking force, depth of ram stroke and synchronization of rams. Verifies dimensions by measuring forged pieces, using gauges or templates.

- 8331-138 FORGING-PRESS OPERATOR**(mach., weld. & forg.) DPT:682
forging-machine operator.
 GED: 3 SVP: 5 EC: I 3 5 6 7 PA: H 4 7

Operates closed-die power press to produce metal forgings:

Installs, aligns and bolts dies on ram and anvil of press, following work order specifications, and using rule, square, shims, feelers and hand tools. Turns knobs to set pressure and depth of ram stroke. Pulls workpiece from furnace when colour of workpiece indicates forging temperature, and positions workpiece on die, using tongs. Depresses treadle or pulls lever to lower ram that compresses metal to shape of die impressions.

May move workpiece through series of dies to obtain progressively finer detail.

- 8331-142 FORGING-ROLL OPERATOR**(mach., weld. & forg.) DPT:682
roll-forging.
 GED: 3 SVP: 5 EC: I 3 5 6 7 PA: M 4 7

Operates forging roll machine to taper or shape metal bar stock:

Bolts two semi-cylindrical dies on opposing roll shafts of machine, using wrenches. Positions and bolts limit stops on machine, using rule, scale, and hand tools. Pulls workpiece from furnace when colour indicates forging temperature is reached, and places it on work table, using tongs. Pushes workpiece into open segment of dies and depresses pedal to rotate dies that grasp metal in circular grooves and roll it between dies. Moves workpiece through progressively smaller grooves on dies to forge it to specified shape. Verifies dimensions, using gauge or scale.

- 8331-146 SPIKE-MACHINE OPERATOR**(mach., weld. & forg.) DPT:662
 GED: 3 SVP: 5 EC: I 3 5 6 7 PA: M 4 5 7

Operates machine that forges spikes, such as those used for boat and railway tracks, from heated steel rods:

Installs and adjusts shaping head of forging hammer, squeezing dies and stop guides according to specifications, using rule, hand tools and chain hoist. Starts spike machine and signals 8331-210 SPIKE-MACHINE FEEDER (mach., weld. & forg.) to feed heated rod into feed rollers of machine and observes forging operation. Grasps sample spike with tongs, observes shape of head and measures spike with gauge to ensure conformance to specifications. Moves lever or depresses pedal to discharge malformed spikes and waste end of rod into receptacle. Replaces and repairs worn and broken parts of machine and conveyor system.

May adjust temperature controls of furnace in which rods are heated.

- 8331-150 BULLET-SWAGING-MACHINE ADJUSTER**(mach., weld. & forg.) DPT:380
swage-tool setter, bullet.
 GED: 3 SVP: 4 EC: I 5 PA: M 3 4 7

Sets up automatic swaging machines that press lead slugs into bullet shapes:

Positions and aligns forming die and punch in machine. Changes length and rate of punch and adjusts automatic feed and ejection mechanisms, using hand tools and gauges. Starts machine to obtain sample of lead bullet to verify machine setup. Examines finished

product for visible defects, such as malformed nose or heel, nicks and scratches. Verifies profile and dimensions, using fixed gauges. Weighs samples on balance scale to ensure conformance to weight specifications. Polishes die by hand, using emery cloth. Lubricates machines, using oil can. Prepares soapy-water solution used in lubricating system, using water, oil and chemical ingredients.

- 8331-154 BOLT-MACHINE OPERATOR, AUTOMATIC**(wire prod.) DPT:682
 GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates one or more automatic machines to shear, head, trim, point and roll-thread bolts from wire stock or rods:

Installs specified dies in machine, using wrenches, rule and gauges. Places wire coil on reel, using hoist, or inserts ends of rods into machine. Threads end of wire through straightening rolls and against stop in machine. Starts machine to make sample bolt. Measures sample with gauges and adjusts dies to obtain specified dimensions.

May adjust and operate machine to reduce shanks of forged bolt blanks preparatory to thread rolling and to trim excess metal from bolt- blank heads.

- 8331-158 BUCKSHOT-SWAGE OPERATOR**(mach., weld. & forg.) DPT:682
 GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates several machines to press lead slugs into buckshot for shotgun ammunition:

Removes and replaces dies, punches and die blocks and adjusts knockout pins, feed fingers and stops, using hand tools. Fills hoppers with lead slugs from tote box, using scoop. Starts machines, and observes operation. Measures diameters of swaged shot samples, using shot gauge, and weighs them on balance scale to determine conformance to specifications. Rolls shot under dial micrometer to verify roundness. Turns bolts, setscrews and stop nuts to adjust position of punches and dies, by trial and error, to produce specified shot.

- 8331-162 HEADER-MACHINE OPERATOR**(mach., weld. & forg.) DPT:682
 GED: 3 SVP: 4 EC: I 3 5 6 7 PA: H 4 7

Operates header-machine to produce items, such as bolts and rivets by bending, offsetting, or heading metal rod or wire stock:

Installs cut-off tool and dies in machine and adjusts cams, guides, and stops, using rule, micrometer and hand tools. Pulls stock from furnace when colour of metal indicates forging temperature, using tongs. Inserts end of stock in automatic feeding mechanism and starts machine. Verifies conformance of part to specifications, using micrometer and set gauges. Positions metal stock against stop or die and depresses pedal to produce single pieces.

May forge objects from unheated metal stock. May operate machine equipped with dies to slot or slit bolt ends. May be designated according to product forged or type of forging machine operated; for example,

Bolt-Header Operator
 Cold-Header Operator

- 8331-166 NUT FORMER**(mach., weld. & forg.) DPT:682
 GED: 3 SVP: 4 EC: I 5 PA: M 4

Operates one or more automatic machines that shear, form and punch nut blanks from hot or cold metal bar or coiled stock:

Installs punching and shearing dies in machine, using wrenches, rule, hammer and gauges. Threads end of coiled stock from feeder reel through straightening rolls and against stop in machine, or aligns bar stock between dies by hand, or using tongs. Starts machine and observes feeding operation, or feeds bar stock against dies. Measures nut blanks with gauges, and adjusts dies to maintain specified dimensions.

May regulate electric induction or gas furnace to heat stock.

8331-170 UPSETTING-MACHINE OPERATOR(mach., weld. & forg.) DPT:682
upsetter.
GED: 3 SVP: 4 EC: 1 3 5 6 7 PA: H 4 7

Operates closed-die forging machine equipped with horizontal ram and gripping die to expand ends of hot metal bar stock: Aligns and bolts specified dies and cams in machine, using rule, square and wrenches. Pulls stock from furnace when colour indicates forging temperature is reached, and inserts stock in gripping die against stop gauge, using tongs or hoist. Presses pedal to close gripping die on stock and to advance ram, squeezing end of metal into gripping die cavity. Moves workpiece through series of dies to shape stock progressively to specifications. Verifies dimensions of forged piece, using set gauges.
May work with cold metal.

8331-174 HEADER OPERATOR, STEEL SHOT(mach., weld. & forg.) DPT:682
GED: 3 SVP: 3 EC: 1 5 PA: M 4 7

Operates battery of machines that forge pellets for air rifles from coils of steel wire:
Aligns die halves that form ball on end of wire, using hand tools. Turns setscrews and stop nuts to adjust and synchronize cut-off tool, ram stroke and feeder arm. Threads wire through straightening rollers and feeding mechanism into ram head. Starts machine by pressing switch, and observes operation to detect malfunction. Measures shot for correct size, using micrometer. Sharpens and shapes cut-off tool, using bench grinder.

8331-178 LEAF-SPRING MAKER(metal fab., n.e.c.) DPT:684
spring former.
GED: 3 SVP: 3 EC: 1 3 5 6 7 PA: M 4 7

Makes spring leaves for automotive leaf springs by performing any combination of the following duties, as member of team:
Cuts spring-leaf blanks to length from bar stock and punches center-holes in all leaf blanks, using power shear and punch press. Feeds leaf blanks manually onto conveyor of automatic furnace for heating end of blank. Lifts leaf blank from furnace and positions hot end in continuously-operating press to taper ends of leaf and punch holes in ends of specified leaves. Heats ends of main-spring leaf in furnace and turns eye on ends of leaf, using forging press. Arranges spring leaves in sets and places in lower die, using tongs. Depresses pedal or pulls lever to force dies together, forming curved set of spring leaves, and quenches them automatically in oil for cooling and tempering.
May install upper and lower dies in forming machine, using hand tools. May heat leaf blanks in furnace and form them by hand. May salvage and reshape defective spring leaves, using furnace and power hammer.

8331-182 LEVERMAN(mach., weld. & forg.) DPT:685
GED: 2 SVP: 4 EC: 1 3 5 6 PA: M 4 7

Tends power hammer or power press to forge metal stock:
Moves levers upon signal from 8331-118 POWER-HAMMER OPERATOR (mach., weld. & forg.) to control force and frequency of hammer blows or ram pressure to shape forging. Lubricates and greases piston rod and moving parts, using oil can and grease gun.
May assist other crew members loading, unloading and positioning materials, manually or using hoists. May clean scale from lower die, using air blast, and shovel refuse into receptacle.

8331-186 COILER, HOT-WOUND SPRINGS(metal fab., n.e.c.) DPT:682
GED: 2 SVP: 3 EC: 1 3 6 PA: H 4 7

Operates machine to wind heavy coil springs from hot-steel bars:
Installs mandrel, lead screw and dies in machine to suit stock diameter, spring diameter, length and pitch, using hand tools. Positions leading end of hot bar under clamp, using tongs. Depresses foot pedal to clamp end of bar and start winding cycle. Grips other end of spring and guides end through dies to prevent twisting, using tongs.
May direct activities of helpers when winding heavy and long bars.

8331-190 BULLET CUTTER AND FORMER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 3 4 7

Tends automatic machines that cut lead wire into slugs and swages them into bullet shapes for small arms ammunition:
Positions drum of lead wire on machine and threads wire over pulleys and through guides and pull-rollers to cutter. Turns setscrew and bolts, using screwdriver and wrench, to adjust stroke of cut-off knife and change length of slugs. Starts cut-off machine and observes operation for malfunction. Empties and replaces catch boxes for slugs. Loads hopper of swaging machine with cylindrical lead slugs. Presses switch to start machine and observes feeding, forming and ejecting mechanisms to detect malfunctions. Notifies adjuster when malfunctions occur. Examines finished bullet for malformation and scratches. Verifies weight, shape and dimensions of finished bullet, using balance scale and fixed gauges. Mixes oil and kerosene in prescribed proportion and fills machine wells to lubricate lead wire or slugs. Lifts and stacks tote boxes of swaged bullets onto pallet.
May make minor machine adjustments, such as replacing worn dies, using hand tools. May tend tumbling machine that smooths edges and cleans slugs.

8331-194 FORGING-PRESS TENDER(mach., weld. & forg.) DPT:685
forge driver
GED: 2 SVP: 3 EC: 1 3 5 PA: M 4 7

Tends closed-die power press that produces metal forgings:
Ensures that furnace is loaded and set at proper temperature. Pulls workpiece from furnace when colour indicates forging temperature is reached, and positions it on lower die, using tongs. Moves controls to lower ram that compresses metal to shape of die impressions. Moves workpiece through series of dies to progressively shape workpiece, using tongs. Operates control to cause lifters to raise finished piece from die.
May prepare press for operation and do minor maintenance, such as lubrication or repacking cylinder glands. May keep daily production record.

8331-198 FORGE HELPER(mach., weld. & forg.) DPT:686
blacksmith helper.
GED: 2 SVP: 3 EC: 1 3 5 6 PA: H 3 4 7

Helps to forge metal products performing any combination of the following duties:
Obtains equipment, such as stop-blocks and hammer-dies from tool room. Cuts metal to predetermined size, using saw. Loads bars, billets or blooms into furnace, using hoist. Lights furnace and turns control valves to regulate temperature in furnace. Lifts parts from furnace with tongs and places them on anvil or under power hammer. Lifts and bolts dies in place on machine, using hoist and wrenches. Strikes parts positioned over forming dies set in anvil, using sledge. Transfers workpiece to and from work stations, such as furnace, hammer and trim press, or yard, using tongs, hoist or cart. Removes scale from workpiece and dies, using broom, airhose, file, hammer and chisel. Grinds surface of finished parts, using portable or stationary power grinders. Loads racks and offbears conveyors, manually or using cart. Cleans and lubricates machines. Sorts metal scrap for reprocessing. Removes ashes from forge, using brush, shovel and bucket. See also definition for term title, 02- 160 HELPER (any ind.).
May be designated according to worker assisted or task performed; for example,
Drop-Hammer Helper
Striker
Upsetter Helper

8331-202 POWER-HAMMER-OPERATOR HELPER(mach., weld. & forg.) DPT:687
GED: 2 SVP: 3 EC: 1 3 5 6 PA: H 4 6 7

Helps to forge heated metal workpieces on power hammer or press equipped with open dies:
Pulls workpiece from furnace with tongs and positions and turns it on hammer anvil, as directed. Removes scale from metal and anvil during forging, using compressed air or broom. See also definition for term title, 02-160 HELPER (any ind.).
May assist in forging unheated metal.

8331-206 NAIL-MAKING-MACHINE TENDER(wire prod.)
DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Tends automatic machines, to cut and shape wire into nails of specified size:
Transfers coils of wire from storage area to machine by hand or using hand truck. Mounts coil of wire on rod of nail-making machine, manually or using hoist. Threads wire through straightening rollers and feeding mechanism into slots of die plates. Tightens roller bolts or guides to regulate feed of wire, using wrench. Pushes button to start machine. Visually inspects nails for flaws, such as chips or distortions. Measures sample nails, using split gauge or micrometer, and notifies set-up man of deviations from specifications. Removes filled tote pans from discharge point of machine and dumps nails in storage containers.
May record production data.

8331-210 SPIKE-MACHINE FEEDER(mach., weld. & forg.)
DPT:666
GED: 2 SVP: 2 EC: I 3 5 6 7 PA: M 4 5 7

Feeds heated steel rods into machine that forges spikes:
Signals other worker to push end of heated rod through open end of furnace. Grasps rod with tongs and shoves it onto feed rollers of machine. Observes colour of rods and notifies 8331-146 SPIKE-MACHINE OPERATOR (mach., weld. & forg.) if colour of rod is not at forging temperature. Assists machine operator in installing dies, adjusting guide stops and maintaining machine, using hand tools.

8333-SHEET-METAL WORKERS

This unit group includes occupations concerned with making and repairing sheet-metal parts or products; such as, rain gutters, ducts, hoods, flashings, signs, and components for restaurant and transport equipment, usually on a custom basis. Activities include: draughting patterns; laying out templates; and measuring, cutting, shaping, bending, soldering, brazing, riveting and crimping sheet copper, steel, aluminum, galvanized iron, tinplate or other sheet-metal stock, using metal-forming hand tools and manually-operated machines, such as benders, shears and rollers. Metalworking-machine operators working on a production basis and using power-operated metalworking machines are classified in Unit Group 8334, METALWORKING- MACHINE OPERATORS, N.E.C. Sheet-metal roofers are classified in Unit Group 8787, ROOFING, WATERPROOFING AND RELATED OCCUPATIONS.

8333-110 MODEL MAKER, HEATING APPARATUS(metal fab., n.e.c.)
DPT:261
GED: 4 SVP: 8 EC: I PA: M 3 4 7

Designs, fabricates, fits and assembles components to make models of heating-apparatus products; such as, oil or gas furnaces, radiators, fans and ventilators:
Examines drawings to determine feasibility of fabricating new products, utilizing knowledge and experience of existing facilities. Makes sketches and drawings when designing components for model by applying knowledge of heating apparatus and experience with sheet metal. Lays out, marks and cuts components, using metalworking hand and power tools. Fits and assembles parts into finished model, using hand and power tools. Presents finished model to company executives, discusses feasibility of production, proposed production schedules and cost estimates.

8333-114 COPPERSMITH(metal. stamp., press. & coat.)
DPT:281
GED: 4 SVP: 8 EC: I 5 6 PA: H 2 3 4 7

Lays out, cuts, bends, shapes and joins pipe sections, pipe fittings, tanks, vats and other parts from tubular and sheet copper, brass and other non-ferrous metals:
Lays out full-scale-floor drawings or makes templates following

drawings of pipe assemblies. Builds framework on bending slab to use as guide for bending, shaping and joining assemblies. Cuts pipe, using hand tools or shop machinery, and packs it with sand, rosin or other material to prevent flattening during bending. Heats pipe with torch to soften metal, and bends pipe, allowing for stretch at outside radius and compression at inside radius, using pipe-bending machines, or bends pipe by hand. Solders or brazes flanges on ends of pipe. Flares or bells pipe mouths, using belling and flaring tools and mallet. Bends tubing to form coils for equipment such as heaters or evaporators. Lays out patterns and templates on sheet stock, using knowledge of geometry. Bends, hammers, bumps, razes and planishes sheet stock to fabricate, such parts as expansion joints, tanks, heads, cowls and air chambers, using hand tools, gas torches, and shop machinery, such as forming press and shears. Sweats, rivets, solders or brazes seams to obtain finished part. Coats parts by dipping them in mixture of molten tin and lead to prevent erosion, galvanic and electrolytic action. Conducts hydrostatic tests to detect leaks in fabricated pipe, boilers or vats. Installs copper piping aboard ship.

8333-118 SHEET-METAL WORKER(construction; metal stamp., press. & coat.)
DPT:281
sheet-metal mechanic.
GED: 4 SVP: 7 EC: I 5 6 PA: M 2 3 4 7

Fabricates, assembles, installs and repairs sheet-metal items; such as, drainpipes, ventilator shafts, furnace casings, eaves-troughs and metal partitions:
Locates and marks dimensions and reference lines on metal stock using scribe, rule and square according to characteristics of metal, word-order specifications or patterns. Sets up, and operates machines; such as, shears, brakes, punches, and drill presses to cut, bend, punch, drill and straighten metal stock. Cuts metal shapes, using hand shears or metal saws. Shapes metal over anvils, blocks or forms, using hammer. Joins metal parts together, using welding or soldering equipment. Smooths seams, joints or burred surfaces, using hand files or portable grinders and buffers. Installs sheet-metal products; such as, ventilating shafts, air and heat ducts, metal partition frames and furnace casings in buildings, using tinsnips, pliers, hammers, screwdrivers and metal saws. Inspects assembled components or installations, using measuring instruments such as calipers, scales, tape rules and micrometers, to ensure conformance to specifications. Keeps production records showing job number and time spent on job.
May be designated according to type of metal used or according to type of activity; for example,
Model Maker, Sheet-Metal
Sheet-Metal Installer
Sheet-Metal Worker, Maintenance
Tinsmith

8333-122 MODEL MAKER, FLUORESCENT LIGHTING
(metal stamp., press. & coat.) DPT:481
GED: 4 SVP: 7 EC: I PA: L 4 7

Lays out and makes experimental models of fluorescent lighting fixtures, such as those used in buildings and tunnels:
Studies drawings, designs and engineering sketches to plan shapes for model fixtures. Computes dimensions and lays out outline of fixture on sheet metal, using rule, scribe, and drafting tools. Cuts and shapes metal, using hand and power brakes, shears, punching and notching machines, files and mallets. Assembles fixtures, using resistance spot-welding machine and hand tools. Fastens glass or plastic lens in place with clips, bolts or screws. Records dimensions, bending angles, hole locations and other specifications for use in production of fixture.

8333-126 MODEL MAKER, METAL FURNITURE(metal stamp., press. & coat.)
DPT:381
GED: 4 SVP: 6 EC: I PA: M 4 7

Cuts, forms and assembles models of metal furniture according to specifications, using hand tools and power tools:
Lays out and marks metal, according to drawings or templates, using scale, straight edge, center punch and scribe. Cuts and forms metal parts, following lay-out lines and using hand tools, and machines; such as, snips, bench shears, drill press, bender, power saw and portable grinder. Fits and assembles parts to produce desired model. Joins parts, using screw-driver, wrench or spot welder.
May use gas-welding torch or electric-arc welder to join heavy parts.
May alter design of finished model according to revised specifications.

8333-130 SHEET-METAL LAYOUT-MAN

(metal stamp., press. & coat.) DPT:381
GED: 4 SVP: 6 EC: 1 PA: M 3 4 7

Lays out reference points and dimensions on sheet metal for shaping and forming sheet metal into parts or products:

Plans and develops layouts as indicated on drawings and templates, applying knowledge of trigonometry, product design, effects of heat, and allowance for curvature and thickness of metal. Details location and sequence of cutting, drilling, bending, rolling, punching and fastening operations, using instruments; such as, square, compass, protractor, dividers, steel tape and rule. Marks curves, lines, holes, dimensions and fastening symbols on workpiece, using scriber, straightedge, soapstone and center punch.

May make and assemble sheet-metal parts to evaluate accuracy of layout.

8333-134 SHEET-METAL CUT-OUT MAN(misc. prod. fab., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: 1 5 PA: M 4 7

Marks and cuts sheet-metal for wind musical instruments, using templates, power and hand tools:

Determines placing of templates on sheet-metal to obtain minimum of waste. Positions template on sheet metal and marks cutting and forming lines on metal, following templates and using scriber. Cuts metal along lines, using hand shears, power shears and electric knife. Stamps identification number on workpiece according to work order, using metal stamps and hammer.

8333-138 SHEET-METAL FINISHER(metal stamp., press. & coat.) DPT:684
GED: 2 SVP: 4 EC: 1 5 PA: M 3 4 7

Repairs surface defects, such as dents, buckles and scratches on sheet-metal parts of such products as transport equipment and appliance cabinets, using dolly blocks, special hammers, burnishing tools and abrasives:

Examines and feels surface of workpiece to determine extent of defect and method of repair. Removes surface defects from workpiece, using one of the following methods: 1. Holds dolly block of correct contour against defect and hammers opposite side to smooth and straighten surface. Smooths repaired area with power sander and abrasive paper. Removes slight defects with file. 2. Burnishes workpiece by lubricating area with oil or grease, rubbing burnishing spoon over metal surface to remove scratches, and tapping out dents with hammer. Polishes surfaces by hand or with power polisher and abrasives. Polishes faces of dolly blocks and hammers to prevent marring of workpiece.

May fill in hollows and cracks with solder or body filler, and sand or file to original shape. May brush-finish or polish metal surfaces not to be painted, such as aluminum or stainless steel, using abrasive or buffing belts and disks. May be concerned with burnishing or removing dents from sheet-metal parts and be designated accordingly; for example,

Burnisher and Bumper
Dingman

8333-142 CUTTER, ALUMINUM SHEET(ship & boat bldg.) DPT:684
GED: 2 SVP: 3 EC: 1 5 PA: M 3 4 7

Cuts aluminum sheets to specified shape for boat hulls and deck sections, using portable saw:

Selects sheets of aluminum of proper thickness, according to work order and using micrometer. Stacks sheets of aluminum on cutting table and places pattern on top sheet. Outlines pattern on sheet, using scriber. Guides saw around outline to cut out hull or deck sections. Drills holes along edges of cut-out parts at specified locations, using portable electric drill, to facilitate attachment of parts or other sections.

8334-METALWORKING-MACHINE OPERATORS, N.E.C.

This unit group includes occupations concerned with setting up, operating and tending power machines to produce metal parts or products, such as tinware, furniture, doors, light structural frames and appliance cabinets, usually on a production basis, from sheet-metal, tubing, wire or bar stock. Activities include: pressing, bending, rolling, punching, cutting and shearing by the application of machine pressure. Occupations concerned with shaping of heavy gauge metal for structural purposes are classified in Unit Group 8337, **BOILERMAKERS, PLATERS AND STRUCTURAL METAL WORKERS.**

**Metalworking-Machine Setting-Up
Occupations, n.e.c.
8334-110 through 8334-158**

8334-110 SLIDE-FORMING-MACHINE SET-UP MAN(metal stamp., press. & coat.) DPT:380
four-slide-machine set-up man.
GED: 4 SVP: 7 EC: 1 PA: M 3 4 7

Sets up multiple-operation slide-forming machines that automatically punch, cut and bend metal strips, bars, rods or wire to fabricate parts, such as flat-coil springs, terminal clips, brackets and hairpins as specified by drawings and set-up charts:

Selects cams and ram slide, and computes feed length position of cams and dies, by applying knowledge of geometry. Aligns and bolts cams to shaft, slides to machine bed, and progressive dies to stationary shoes and cam actuated slides, using micrometers, gauges, feelers, rule and hand tools. Adjusts position of cams to synchronize action of rams, cutters and feed rolls that feed stock. Turns flywheel by hand to produce sample part. Readjusts position of dies and cams to achieve specified shape and dimensions.

8334-114 METALWORKING-MACHINE SET-UP MAN(metal stamp., press. & coat.) DPT:360
die setter; job setter; machine setter.
GED: 4 SVP: 6 EC: 1 5 PA: M 4 5 7

Sets up various types of metal forming, shaping and cutting machines, such as brakes, shears, slitters, punch presses and bending and straightening machines to cut, trim, bend, roll, punch, and straighten metal sheet, plate or bar stock as specified by work order or drawings:

Positions, aligns and secures dies, blades, guides, stops, jigs and fixtures, using measuring tools and hand tools. Adjusts machines for depth and pressure of stroke, applying knowledge of thickness and properties of metal, or according to standard specifications. Makes trial run and measures sample workpiece for conformance with specifications. Instructs operators in special handling techniques of machines and materials. Clears jams and corrects malfunctions of machines. Reports need for machine repairs to supervisor.

May set up automatic or multipurpose machines or those equipped with progressive dies. May specialize in setup of single type of machine and be designated accordingly; for example,

Brake Set-Up Man
Punch-Press Set-Up Man
Roll-Forming-Machine Set-Up Man
Shear Set-Up Man

8334-118 BRAKE SET-UP OPERATOR(metal stamp., press. & coat.) DPT:380
power-brake operator; press-brake operator.
GED: 4 SVP: 6 EC: 1 5 6 PA: M 3 4 7

Sets up and operates power brake to bend, straighten, notch, punch or form rolls or arcs in metal sheets, plates and structural shapes to specifications:

Reads work order and drawings for specifications. Develops layout and sequence for type of operation, applying knowledge of geometry, effects of heat, and physical properties of metal. Selects, inserts, aligns and clamps dies in machine ram and bed, using shims, rule, square, templates and wrenches. Sets specified pressure of ram and clearance

between dies according to thickness of metal, as indicated by calibrated scale and feeler gauge. Positions stops and guides, using scale and wrench. Lays out dimensions on workpiece from drawings or templates. Positions and aligns workpiece manually or signals and guides crane operator to position workpiece. Installs punches or blades in machine to perform notching, punching or shearing operations as required. Starts machine to lower ram that bends, punches, or cuts metal. Measures first-run workpieces with scale and square and adjusts brake as necessary. Adjusts stops on machine bed and repositions stock to run successive pieces, or to perform multiple operations.

May devise and build temporary dies. May operate apron brake which bends metal by forcing it between movable apron and horizontal bending bar. May set up several sets of dies and stops and reposition workpiece to perform successive operations from single setup. May preheat heavy-metal workpieces, using oxygen-acetylene torch or heating furnace.

8334-122 FORMING-ROLL SET-UP OPERATOR(metal stamp., press. & coat.) DPT:380
GED: 4 SVP: 6 EC: I 5 PA: H 4 7

Sets up and operates forming-roll to flare, straighten, knurl or form contours in previously curved surfaces of metal workpieces as specified by drawings, templates and work orders:

Selects male and female forming wheels, specified on data charts to form specified contour. Positions, aligns and bolts forming wheels onto parallel spindles of machine. Positions cylindrical workpiece over inner dies or forming chuck. Moves lever to press outer roll on workpiece to rotate it between forming wheels and shape it to specified contour. Verifies contours, using rule or template. Operates machine equipped with jointed shaft or vertical table to tilt and force workpiece at angle to plane of opposing rolls to expand outer edge or form flanges to specified shape. Operates machine equipped with multiple sets of opposing rolls which expand and shrink diameter of workpiece to form contours. Preheats heavy gauge metal workpieces in furnace or with hand torch. Repeats rolling operation or changes forming wheels to shape workpiece progressively with each pass.

8334-126 STRAIGHT-LINE-PRESS SET-UP MAN(metal stamp., press. & coat.) DPT:360
GED: 3 SVP: 6 EC: I 5 PA: M 4 5 7

Sets up machines to draw and trim brass or steel bullet-jackets and assemble jacketed bullets for small arms cartridges:

Installs punches and dies, feed pipes, hoppers, guides, pins and bushings to accommodate size of bullets to be processed, using hand tools. Adjusts automatic feeding, transporting, pressing and ejecting mechanisms and microswitches by turning set screws and stop nuts. Installs cutters and adjusts stops and cams to regulate machine stroke and synchronize movements of trimming mechanisms, using mechanics' hand tools. Operates machine and examines bullet jackets for defects, such as dents, scratches or malformation and verifies conformance to specified dimensions, using gauges. Operates speed lathe and bench grinder to reshape or polish punches and dies. Removes housings, guards, feed tubes, chutes, tool holders and other parts to replace worn or broken machine parts, such as springs, pins, die bolts and washers. Gives instruction to new workers in machine operation and use of gauges.

8334-130 SHEET-METAL-WORKING-MACHINE SET-UP OPERATOR (metal stamp., press. & coat.) DPT:380
GED: 3 SVP: 6 EC: I 5 6 PA: M 3 4 7

Sets up and operates various types of metalworking machines; such as automatic or multipurpose brakes, rolls, shears, rivetting or spot-welding machines to form, slit, rivet, spot-weld, burr, trim, bead, groove, crimp, bend, roll and shear sheet metal:

Positions and fastens dies, blades, cutters and fixtures into machine, using rule, square, shims, template and hand tools. Positions and clamps guides on machine. Adjusts pressure and depth of ram stroke, rolls and speed of machine. Locates and marks bending and cutting lines and reference points on workpiece, using rule, square, compass and straightedge. Positions workpiece manually against stops and guides or aligns marks with dies or cutting blades and starts machine. Repositions workpiece and changes dies for multiple or successive operations. Inspects work, using rule, gauges and templates. May operate drill presses.

8334-134 SLIDE-FORMING-MACHINE SET-UP OPERATOR(metal stamp., press. & coat.) DPT:380
four-slide-machine operator.
GED: 3 SVP: 6 EC: I 5 PA: M 4 7

Sets up and operates one or more slide-forming machines that automatically punch, cut, bend and form metal strips, bars, rods and wire by action of opposing rams to fabricate parts, such as flat coil springs, brackets, clips and other wire forms:

Aligns and bolts appropriate cams to shaft, slides to bed and dies to slides and stationary shoes, using calipers, block gauges, micrometers and wrenches. Adjusts position of cams to synchronize action of dies, cutters and feed of machine. Places rolls or coils of stock onto reel stand and threads end through straightening and drive rolls. Turns flywheel by hand to ensure that synchronization and clearances are correct and to produce sample part. Starts machine, observes operation and tightens nuts and setscrews to maintain setup. Verifies finished parts, visually and by using gauges and micrometers. Removes trays of finished parts, when specified number have been produced.

8334-138 NAIL-MAKING-MACHINE SET-UP OPERATOR(wire prod.) DPT:380
GED: 3 SVP: 5 EC: I 5 6 PA: M 3 4

Sets up and operates battery of machines that automatically cut and shape coiled wire to make nails of specified sizes:

Installs die plates and nail-point cutting knives and positions feeding mechanism, according to work order specifications, using hand tools. Mounts coil of wire on rod, and threads wire through straightening rollers and feeding mechanism, and into slots of die plates. Tightens roller bolts to secure wire, using wrench. Turns flywheel to make sample nail. Measures nail with split gauge or micrometer, and inspects it for flaws, such as chips and distortions. Starts machine and observes operation to ensure product meets specifications. Replaces worn or broken machine parts, using hand tools. Lubricates moving parts of machines, using lubricating equipment.

May make staples and be designated accordingly,
Staple-Machine Set-Up Operator

8334-142 POWER-PRESS SET-UP OPERATOR(metal stamp., press. & coat.) DPT:380
GED: 3 SVP: 5 EC: I 5 6 PA: H 4 7

Sets up and operates power press (other than forging press or steel plate bending machine) to trim, punch, notch, or otherwise shape metal stock between dies:

Reads work order, drawings or sketches for job specifications. Installs and aligns dies in press according to specifications, using feelers, shims, templates, bolts, clamps and wrenches. Adjusts length of ram stroke specified for particular die and gauge of metal. Turns knobs or installs gears on automatic machines to synchronize action of feed bar or pinch rollers, with feed and takeoff conveyor and automatic action of ram. Positions and clamps feed guides. Positions workpiece against fixtures, or stops, on machine bed or die, or threads metal strip from play-out reel through pinch rollers. Starts press. Inspects finished workpieces for conformance to specifications visually or with gauges or templates.

May be designated according to type of machine or purpose of machine; for example,
Draw-Press Operator
Forming-Press Operator
Multiple-Punch-Press Operator

8334-146 BENDING-MACHINE SET-UP OPERATOR(metal stamp., press. & coat.) DPT:380
GED: 3 SVP: 5 EC: I 5 PA: M 4

Sets up and operates bending machine to bend metal structural shapes, such as bars, rods, angles, pipes and tubes, to angle or configuration specified by work order, drawings, templates or layouts:

Selects and bolts holding clamps, die block and guide clamps to machine. Positions and clamps end-stops on machine to set specified location of bend. Inserts or screws plug stops or dies into guide wheel to set specified degree of bend. Positions workpiece against end-stop. Locks holding clamp and guide clamp onto workpiece. Lubricates workpiece with oil. Starts turntable that draws workpiece through guide clamp around die block until stopped by plug stops or until dial indicator points to specified degree of bend.

May slide mandrel into tubing instead of using guide clamp. May

preheat workpiece, using hand torch or heating furnace. May fill tubes or pipe with sand, resin or lead to prevent wrinkling or collapsing. May cut metal stock to length, using power shears or saws. May be designated according to type of stock bent; for example,
Pipe-Bending-Machine Operator
Rod-Bending-Machine Operator
Tube-Bending-Machine Operator

8334-150 INDUSTRIAL-NEEDLE-MACHINE SETTER-OPERATOR(misc. prod. fab., n.e.c.) DPT:380
industrial-needle maker.
GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Sets up and operates a variety of semi-automatic or automatic metalworking machines that form industrial knitting and barbed (felting) needles, performing any combination of the following duties: Selects, installs and adjusts dies, punches, bushings, stops and other mechanisms, using micrometers, magnifying glass and hand tools. Adjusts timing, lubrication, gas jet, rheostat and feeding mechanisms to specifications. Starts machines to produce sample workpieces and adjusts machines to obtain workpieces which meet specifications. Operates one or a variety of machines that process steel wire into industrial knitting needles by shearing, swaging, annealing, milling, pressing, stamping, drilling, punching, riveting and abrading. Measures samples against standards, using measuring instruments. Repairs and services machines. Records production data. May direct machine feeders on production requirements.

8334-154 MULTI-OPERATION-FORMING-MACHINE SET-UP OPERATOR(metal stamp., press. & coat.) DPT:380
GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Sets up and operates automatic multiple-operation machine to perform any combination of bending, punching, roll forming, beading, cutting, welding, soldering or clinching of metal to fabricate items such as rims, mouldings, cans, tubing and housings specified by drawings or work orders: Positions and aligns feeding and forming rolls, punching, notching or forming dies, shears or cutter blades and electrodes, using rules, vernier gauges, micrometers, square, shims and hand tools. Sets side guides and stops. Turns knobs to regulate resistance welder and synchronize speed of feed rolls and conveyor with action of roller dies, forming rolls, punch, rotary cutter or shear rams and welding unit. Places roll of sheet or strip metal or wire onto feed rack, using hoist, and threads end into feed rolls or places metal blanks or bars onto conveyor, into hopper or against guides to feed machine. Starts machine. Verifies dimensions of finished product visually or using micrometers or gauges. Removes finished parts from machine. May operate a line of machines working in tandem on assembly line. May be designated according to function of machine; for example, Can-Forming-Machine Operator
Tube-Mill Setter-Operator

8334-158 SPRING-MAKING-MACHINE SET-UP OPERATOR (metal fab., n.e.c.; wire prod.) DPT:380
GED: 3 SVP: 5 EC: I PA: L 4

Sets up and operates machines to wind, shape and finish tension, compression and torsion coiled springs, flat springs and wire forms to specifications: Selects and installs attachments, such as arbor, pitch tool and cutter on machine, using hand tools. Lifts roll of wire stock onto holding device, threads wire through machine guides and adjusts machine to control pitch and diameters of springs. Makes trial run and measures sample product for conformance to specifications, using gauges and micrometers. Verifies action of spring under load. Readjusts machine setup until accurate production is attained. Recommends changes in spring specifications, in machine setup and procedures to make product. Positions coiled springs on jig press and depresses pedal to lower shaping die that stamps, crimps, hooks or loops end of wound springs or wire forms. Finishes ends of springs by pressing them against abrasive wheel to remove burrs and flatten and square spring ends. May drill and tap holes in flat springs, using single-spindle drill press. May use hand tools, vise and forming plates to crimp and true springs, and bend loops and hooks on spring ends.

Metalworking-Machine Operating Occupations, n.e.c.
8334-178 through 8334-270

8334-178 DISK-FLANGING OPERATOR(metal stamp., press. & coat.) DPT:382
GED: 3 SVP: 5 EC: I 5 PA: H 3 4 7

Operates machine to form flanges on metal disks and dished heads: Selects and fastens fixture onto free moving ram and powered turntable. Positions workpiece onto block or fixture on turntable, using hoist, sledge and steel tape. Clamps workpiece onto turntable, by pulling lever to lower ram on workpiece. Selects rollers and bolts them to spindles of machine with edge of workpiece between rollers. Turns handwheel to adjust rollers to thickness and curvature of metal and to exert bending pressure. Starts machine which rotates edge of workpiece through rollers. Re-adjusts curvature and bending pressure to form specified flange on workpiece. Verifies shape of flange, using template.

8334-182 DUPLICATOR-PUNCH OPERATOR(metal stamp., press. & coat.) DPT:382
GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates duplicator-punch, that follows tracer track on template, to punch, blank and notch metal plates, sheets and structural shapes: Positions and clamps track template onto table of machine. Inserts, aligns and locks specified punches and dies in ram and bed of machine, using hammer, shims, feelers, micrometers and setscrews. Places workpiece on carriage of machine manually or with jib or crane. Aligns workpiece to scale on machine and clamps it to carriage. Sets end and side stops to position successive pieces. Positions tracer arm one track of template and turns handwheels to move carriage along track to punching stations. Pulls lever or presses foot pedal to activate punch. Positions punch or die over lay-out marks on jobs for which no template is available. Inspects workpieces to verify location of holes, using scale, compass and plug gauges.

8334-186 SPINNER, METAL(metal stamp., press. & coat.) DPT:382
sheet-metal spinner; spinning-lathe operator.
GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates spinning lathe equipped with manually or hydraulically controlled forming tools to spin (form) shaped articles from sheet or plate metal, following drawings and knowledge of physical properties of metal: Secures specified spinning chuck to headstock spindle and follow block to tailstock, using hand tools. Clamps metal disk (workpiece) to chuck by turning handwheel to force follow block against disk. Starts machine, ensures that disk is centered and spinning without eccentricity, and coats outside of rotating disk with spinning compound. Positions, holds and moves long-handled-lever tool against disk, using steady rest or steel pin in tool rest as fulcrum point to apply required pressure to form disk into shape of spinning chuck, or operates hydraulic control to set pressure applied to disk. Varies amount and location of pressure on disk according to type of metal, shape of spinning chuck, speed of lathe and temperature and thickness of metal disk. Resets position of forming tool or changes chuck to form disk into shape. Replaces forming tool with cutting tool to trim excess metal from shaped part. Verifies dimensions of finished article with verniers, steel rule and diameter tape. May form wood-spinning chucks by turning on lathe. May smooth surface of workpiece, using planishing tool and rotary-power sander.

8334-190 STRIP-ROLL-FORMING-MACHINE OPERATOR(metal stamp., press. & coat.) DPT:382
GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates machine to form longitudinal bends, rolls, beads or embossed design on continuous sheet-metal strips to produce products such as mouldings, trim and weather stripping as specified by work order and drawings: Bolts specified roller dies and drive rolls onto spindles and adjusts rollers for thickness of metal, using feelers, rule, shims, gauges and hand tools. Adjusts side guides. Turns knobs to set footage meter and control which stops machine or activates automatic shear when specified length of strip has been run. Lifts coils of metal onto feedrack, using hoist and threads end into feed rolls. Directs flow of

coolant onto rolls. Starts machine, observes operation and turns knobs to adjust roll pressure. Verifies dimensions of finished products, using micrometers, gauges and rule.
May feed precut strips of metal into machine. May turn knobs or install gears to change speed of machine. May set up and operate punch press to cut off individual rings from spiralled strip.

8334-194 FENCE-MAKING-MACHINE OPERATOR(wire prod.) DPT:682
GED: 3 SVP: 5 EC: I 5 PA: H 4 7

Operates machine that forms wire-mesh fencing:
Positions rolls of specified gauge wire onto spools and joins wire ends, using resistance butt welder or acetylene torch. Verifies wire size, using standard wire gauge. Assists set-up man to select mesh or forming dies according to wire and loop size, and in bolting dies on weaving spindle of machine. Draws wire through die to specified height, according to work specifications. Turns setscrew to adjust automatic wire cutter, using wrench. Pushes buttons on control panel to start oil pump, machine motor and automatic shut-off device. Pulls clutch lever to start or stop machine. Adjusts roll tensions, guide and blade positions, using hand tools. Observes machine counter and removes rolls of fencing when specified lengths are made. Records number of rolls of fence fabricated. Ties, tags and places rolls on handtruck.

8334-198 STRAIGHTENING-PRESS OPERATOR(metal stamp., press. & coat.) DPT:682
GED: 3 SVP: 5 EC: I 5 6 PA: M 3 4 7

Operates power press to straighten warped or bent metal objects, such as plates, structural shapes, forgings, weldments, tubes, shafts and bar stock to specified dimensions:
Examines workpiece to locate defects, by sighting along edge and using devices such as straightedge, rule, tape, deflection gauge, template and square. Plans sequence of operations, applying knowledge of physical properties of metal. Positions and locks specified pressure blocks or dies into ram and on bed of machine or positions shims under low spots of workpiece. Lifts and positions workpiece onto bed of machine manually or with crane. Starts ram which presses out bent or high spots of workpiece. Re-examines and repositions workpiece, changing shims for each pass until workpiece conforms with specifications. Turns levers, handwheels or dials to adjust depth and pressure of ram.
May preheat metal, using heating furnace or hand torch. May tend machine equipped with preset dies to bend metal to specified shapes. May be designated according to item straightened.

8334-202 ROLL-THREADER OPERATOR(wire prod.) DPT:682
GED: 3 SVP: 5 EC: I 5 PA: M 4

Operates one or more automatic machines that roll-threads hot or cold forged bolt blanks by application of machine pressure:
Installs specified roll-threading dies in machine, using wrenches, and rule. Fills feed mechanism with stock, by hand or using hoist and starts machine. Measures bolts with micrometer thread gauge, or rule and adjusts dies and stops to maintain specified dimensions.

8334-206 FLYING-SHEAR OPERATOR(iron & steel) DPT:382
flying shearman.
GED: 3 SVP: 4 EC: I 3 5 6 PA: H 4

Operates flying shear and other mill equipment such as guides and crop or entry gates, to cut hot steel products to specified length:
Reads production schedule to determine setup or adjustment of equipment. Installs knives in shear and guides on roll stands, using hand tools and sledge. Resets lever gauge to adjust cutting action of shear according to specified length of product. Starts shear and moves controls to raise and lower pinch rolls, adjust guides and open and close shear gates. Assists other workers in changing rolls. Removes cobbles (tangles) of metal stock from rolling line by operating shear to crop billets or rods, hooking billet with hand hook, and dragging it from processing area.
May measure length, width and gauge of product, using micrometer and tape to ensure conformance to specified dimensions.

8334-210 NIBBLER OPERATOR(metal stamp., press. & coat.) DPT:382

nibbling-machine operator.

GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates machine that cuts metal plates or sheets into specified radial or irregular shapes by action of reciprocating cutters or punch and die:
Positions and clamps specified cutter or punch and die into ram and bed of machine. Turns thumbscrews to adjust depth of stroke according to thickness of metal. Turns handwheel to set specified distance between cutter or punch and center point of turntable or fixture, using scale or rule. Clamps template or guide and drive rollers over workpiece. Depresses pedal which activates machine to cut or punch along radius or straight line. Guides workpiece manually along cutting lines or template to cut irregular shapes.

May lay out guidelines on workpiece by tracing from template. May drill bolt or center hole into workpiece, using portable drill or drill press. May remove burrs with file or grinder.

8334-214 POWER-SHEAR OPERATOR(metal stamp., press. & coat.) DPT:382
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates power shear to cut metal plates, sheets, billets or bars to specified dimensions and angle:

Reads work order, sketches or drawings for job specifications. Turns handwheels to adjust rake (angle) and pressure of blade. Positions and clamps stops and side guides to set length and angle of cut, using rule, built-in gauges, or template. Slides workpiece on conveyor, or lifts workpiece manually or with hoist or crane onto machine bed or roller table and positions it against side guide and end stops. Starts machine which clamps workpiece and lowers blade to cut metal. Lays out cutting lines on metal, using rule, square or template when shearing single pieces.

May set up and operate shear on production line where shear is fed by conveyor, such as automobile frame line or rolling mill. May operate portable shear to cut sheet metal. May inspect work, using tape, compass, gauge, template or micrometer to verify dimensions.

8334-218 PUNCH-AND-SHEAR-MACHINE OPERATOR(metal stamp., press. & coat.) DPT:382
GED: 3 SVP: 4 EC: I 5 6 PA: M 3 4 7

Operates machine to punch, shear and notch or trim metal-structural shapes and plates:

Positions specified punch and die sets and fastens them into ram and bed of machine by tightening lock screws with wrench. Sets up cutoff, trimming and notching sections of machine by positioning specified cutting blades into cutting slot, and notching dies or shear blades into ram and bed of machine, and tightens lock or clamp screws with wrench. Measures workpiece with rule or tape or traces from template to locate holes or cutting lines as specified by work order and marks them with scriber, soapstone and center-punch. Pulls lever to engage power to section used. Positions workpiece into cutting slot or under punch, die or trim blade and aligns punch or blade with layout marks. Pulls lever or depresses pedal to activate machine. Sets stops or positions guide jigs to specified location when several pieces are worked.

8334-222 PUNCH-PRESS OPERATOR(metal stamp., press. & coat.) DPT:382
punch operator.
GED: 3 SVP: 4 EC: I 5 PA: H 4 7

Operates power press equipped with punch to notch or punch metal plates, sheets, or structural shapes:

Positions, aligns and clamps specified punch and die set into ram and bed of machine, using feelers, gauges, shims, rule and template. Turns handwheel to set depth of stroke. Lifts workpiece onto machine bed or roller table, manually or by using hoist or crane. Positions lay-out marks on workpiece between punch and die. Positions and clamps guide stops to run successive pieces. Starts ram to drive punch through workpiece.

May operate machine equipped with two or more punch and die sets. May trace lay-out marks on workpiece from template or lay-out reference lines on workpiece, using rule and compass.

8334-226 ROLL OPERATOR, SHEET METAL(metal stamp., press. & coat.) DPT:382
GED: 3 SVP: 4 EC: I 5 6 PA: H 3 4 7

Operates slip-rolling machine to bend sheet metal to specified curvature:

Lifts upper roll and positions workpiece into machine manually. Sets adjustment roll to position specified by layout or worksheet to form desired shape in single pass. Turns switch to start machine. Measures arcs with template or rule. Depresses pedal to open gate and raise top roll to permit removal of cylindrical shapes. Removes shaped workpiece from rolls for further processing. Lubricates equipment periodically, using oil can and grease gun.

8334-230 ROTARY-SHEAR OPERATOR(metal. stamp., press. & coat.) DPT:382
circular-shear operator; ring-shear operator.
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates machine equipped with opposing circular cutters to shear metal plates and sheets to specified circular and curved dimensions:

Checks thickness of metal, using gauge or micrometers. Adjusts distance between cutters for thickness of metal by turning thumbscrews or moving series of levers, and using feeler gauges, scale or pattern. Lifts workpiece manually or with hoist to position workpiece onto machine. Clamps workpiece to turntable and turns handle which moves sliding arm to scale on machine, or uses template to set distance between center point and cutting blades. Starts rotating action of cutters and turntable to cut metal. Aligns workpiece between cutting blades manually or with hoist and guides it along lay-out lines to cut irregular shapes. Turns handwheels which tilt machine table or installs fixture to cut specified bevel on workpiece. Checks completed workpiece for defects and correct size, using template.

May lay out lines on workpiece, using compass or trace them from template. May change cutters, using mechanics' hand tools.

8334-234 SHEAR OPERATOR, AUTOMATIC(metal stamp., press. & coat.) DPT:382
automatic-shear operator.
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates shear that automatically cuts to uniform length, metal sheets, bars, wires, rods and tubes fed into machine from continuous coil or conveyor:

Reads production schedule or workorder to determine setup and adjustments required to shear metal to specified dimensions. Positions coil into roll stands, using jib or crane. Threads metal through machine. Turns handwheels to adjust drive rolls to thickness of metal and to set guides, rake (angle) and pressure of blade. Turns screws to set length adjustment, using built-in gauge, tape or template. Turns knobs to synchronize speed of drive roll or conveyor with cutting action of shear. Adjusts straightening roll to straighten sheet-metal or wire emerging from coils. Observes operation to detect jams. Inspects finished work, using tape, compass, gauge, template or micrometer to verify dimensions.

May set up slitter to trim sheets to specified width. May install doubling fixture to feed more than one coil into shear simultaneously.

8334-238 SLITTING-MACHINE OPERATOR(metal stamp., press. & coat.) DPT:382
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates slitting machine to cut sheet-metal into strips of specified width:

Selects, cleans and installs spacers and cutters on arbors, and hones cutters with oilstone to remove nicks. Presses button to lower arbor until cutters mesh, and measures clearance with feeler gauge. Inserts spacers to adjust spacing to specified tolerance. Signals crane operator or lifts and positions metal roll on pay-out reel, using hoist or hydraulic lift. Threads sheeting through slitter and verifies dimensions of cut to specifications, using rule. Secures strips on recoiler, adjusts guides and roller tension with handcrank and starts machine. Observes slitting and rewinding operation and examines strips for turns, holes and other surface defects.

May oil and clean machine. May feed sheet metal between rotating shear rolls.

8334-242 TURRET-PUNCH-PRESS OPERATOR(metal stamp., press. & coat.) DPT:382
multi-punch operator.
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates turret-punch press to punch holes, notches, or lay out marks in metal sheets, plates or strips, following settings specified on charts:

Inserts, aligns and locks punches and dies in turret, using hammer, shims, feelers and setscrews. Places workpiece on machine table manually or by using jib, crane or hoist. Aligns workpiece to scale and end gauge on machine and clamps it to machine table. Pushes button to turn turret to specified punch and die. Turns cranks to set indicator to specified dimension on longitudinal and lateral scale. Presses pedal to activate punch. Repeats operation for each machine setting specified on charts. Positions center punch from turret to touch plate and turns crank to scratch lay-out lines on workpiece. Computes own punch charts from drawings, using square, scale and applying knowledge of shop mathematics.

8334-246 HOOP MAKER, MACHINE(metal stamp., press. & coat.) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: H 4 7

Operates machines to make barrel hoops from strap steel:

Installs and adjusts rollers, punches and shear plates in hoop-punch-and-coiler machines, using wrenches. Places roll of strap steel on spindle, inserts end in feed rollers and starts machine that cuts and coils strap to correct length and diameter for hoops and punches rivet holes in strap. Removes punched and coiled hoops. Aligns holes of coiled hoops on shank of rivets in rivetting machine. Slides hoop with protruding rivets under reciprocating hammer that flattens rivet shanks. Places hoop over mandrel of hoop-flaring machine and moves leg control to expand jaws that flare hoop to conform to shape of barrel.

May be designated according to machine operated; for example, Hoop-Flaring-Machine Operator
Hoop-Punch-and-Coiler Operator
Hoop-Rivetting-Machine Operator

8334-250 IMPRESSION-DIE-PRESS OPERATOR(metal stamp., press. & coat.) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Operates hydraulic press that forces hard-steel hob (model) into soft-steel block to form molding die:

Positions pre-marked soft-steel block in retainer ring of press and sets specified hob on block. Places plug over hob to hold it in alignment. Turns handwheel to raise ram which holds block and hob in place. Starts pumps to build up prescribed hydraulic pressure. Pulls lever to exert pressure on ram which presses hob into soft-steel block to specified depth, forming impression die. Releases pressure, removes workpiece manually and clamps it in vise. Taps block with hammer to loosen hob and removes it from block. Inspects die for defects, such as rips or flaws, using magnifying glass. Checks accuracy of imprinted block with calipers and micrometers.

8334-254 TUBE BENDER, MUSICAL INSTRUMENTS(misc. prod. fab., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I PA: L 4

Operates machines and uses forming jigs to cut, deburr, anneal and bend brass wind instrument tubes:

Sets length gauge of saw and pushes tubes into rotating blade to cut tubes to specified lengths. Inserts burring tool into chuck of lathe and holds tube ends against rotating burring tool to remove burrs. Places tubes on sprockets of wheel that revolves between two torches to anneal tubes for ease of bending. Sets up jig to bend tubing to specified shape. Fills tubes with sand, lead or other filling to prevent wrinkling during bending. Bends tubing around forming jigs or blocks by hand. Removes filling by immersing tube in boiling water or by heating with torch. Verifies accuracy of bend, using template.

May set up and operate hydraulic press to bend tubes.

8334-258 WIRE-CRIMPING-MACHINE OPERATOR(metal fab., n.e.c.; wire prod.) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Operates machine to crimp wire to specified shape for making products such as zig-zag springs or wire mesh:

Bolts specified crimping wheels or forming dies into machine jaws, using wrench. Loads coil of wire onto reel of machine and thread wire through feed rollers and cut wire to length. Starts machine and obtains sample of crimped wire of specified type and size. Measures sample, using gauges, and changes crimping wheels or dies, or adjusts tension of machine until crimping meets specifications.

May be designated according to product made; for example, Zig-Zag-Spring-Machine Operator

8334-262 BALE-TIE-MACHINE OPERATOR(wire prod.) DPT:682
wire-loop-machine operator.
GED: 3 SVP: 4 EC: I 5 PA: M 4

Operates wirecutting and straightening machine, equipped with forming attachment, to form wire ties for tying bales of paper, hay or other materials:

Adjusts driving and straightening rollers, forming attachment, and jaws of holding device, using hand tools. Adjusts speed of driving rollers by turning crank or adjusts gears, using hand tools, to set specified length of bale tie. Inserts wire between driving and straightening rollers and starts machine that automatically cuts, forms, and ejects specified number of bale ties in bundle onto rack for wrapping. Examines ties for conformance to specifications. Wraps bundle by hand or uses machine-wrapping device. Sharpens cutters, using bench grinder and files. Replaces worn or damaged parts such as gears and belts, using hand tools. Repairs wire breaks, using butt welding machine. Sprays bale ties with oil, using portable sprayer. May operate several bale-tie-machines.

8334-266 BELL SPINNER(misc. prod. fab., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: I 6 PA: M 4 7

Operates spinning lathe to spin (form) musical instrument bells: Fastens bell-shaped mandrel onto lathe and positions and locks tube shaped workpiece on mandrel. Starts workpiece rotating and positions forming tool in holding device. Holds and moves forming tool along workpiece, applying pressure to form workpiece to shape of mandrel. Holds cutting tool against spinning bell to trim bell to size. Removes tarnish and scale from bell, using file, and emery cloth. Holds bead tool against bell to roll edge back, forming bead cavity. Burnishes bell with burnishing tool.

May insert wire into bead cavity and close cavity with bead tool.

8334-270 LEAD-FITTINGS FINISHER(metal fab., n.e.c.) DPT:682
lead fabricator.
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates lathe to form lead-plumbing fittings to specific shape and size:

Mounts lead pipe over mandrel in previously set-up lathe. Starts lathe and presses special hand tool, or turns handwheels to advance special tools against end of pipe, to stretch and bend pipe against rounded end of mandrel to form traps of various sizes. Reduces or expands diameter of lead-pipe openings by positioning tool against outside or inside surface of rotating pipe. Inserts iron ring inside of expanded pipe or positions it on outside of reduced pipe. Rolls edge of pipe end over ring to hold it in place. Solders brass ferrule over end of lead bend to seal junction. Heats threaded-brass ring and presses reduced opening of pipe through ring to fuse them.

8334-290 KEG-MAINTENANCE MAN(metal stamp., press. & coat.) DPT:685
barrel de-denting-machine operator.
GED: 3 SVP: 4 EC: I 4 5 PA: M 4 7

Tends machine to remove dents from metal kegs or barrels:

Positions barrel on lower die of machine, aligning bunghole under water spout of machine and fills barrel with water. Turns side dies of machine to align contour of dies with contour of barrel ends. Presses switch that closes side, top and bottom dies around barrel. Pumps water into barrel, to force walls of barrel against dies, to remove dents. Stops pump, release pressure and opens dies after specified water pressure has been attained. Examines surfaces of barrel to verify smoothness. Checks for leaks from barrel or valve, and marks leaks with pencil or chalk. Replaces damaged valves, using wrench and chisel. Drains water from repaired barrels. Scraps damaged barrels of specified vintage. Repaints identifying strip around center of kegs, using brush. Counts and records quantity and type of keg scrapped and repaired. Pushes repaired and serviceable barrels onto conveyor.

8334-294 BRAKE TENDER(metal stamp., press. & coat.) DPT:685
GED: 3 SVP: 4 EC: I 5 PA: M 3 4 7

Tends power brake that bends, straightens, punches, or forms rolls or arcs in metal sheets, plates and bars:

Positions workpiece, manually or with hoist, against stops or aligns lay-out marks to dies. Brushes oil on dies and workpiece. Starts machine to lower ram and shape workpiece. Tightens die nuts to prevent movement of die, using wrenches. Inspects work for conformance to specifications, using rule, square or templates. Cleans scale or scrap from die with air hose or brush.

May be designated according to kind of material shaped; for example, Brake Tender, Sheet Metal

8334-298 SHEET-METAL-WORKING-MACHINE TENDER (metal stamp., press. & coat.) DPT:685
GED: 3 SVP: 4 EC: I 5 6 PA: M 3 4 7

Tends various types of metalworking machines; such as, brakes, rolls, shears, rivetting or spot-welding machines to shear, trim, slit, bend, form, crimp, bead and join together sheet metal:

Adjusts stops or guides to specified length as indicated by scale, rule or template. Positions workpiece manually against stops or aligns lay-out marks with die or blade. Pushes button or depresses pedal to activate machine. Checks work, using rule or template. Performs other duties common to sheet-metal shops, such as assisting in moving sheet-metal and products.

May clear minor jams by pulling out buckled or wrinkled sheets.

8334-302 SLIDE-FORMING-MACHINE TENDER(metal stamp., press. & coat.) DPT:685
four-slide-machine tender.
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Tends one or more slide-forming machines that automatically feed, punch, cut and form strip metal, bars, rods or wire stock to fabricate parts, such as flat coil springs, terminal clips and hairpins:

Threads metal strip or wire through straightening rolls and die sets, turning flywheel by hand, and starts machine. Measures sample of finished parts with fixed or precision measuring gauges, such as micrometers and verniers, and examines parts for surface defects or scratches. Shuts off machine and notifies foreman if parts do not meet specifications.

May weld ends of two coils together by resistance-butt-welding device to form continuous length of stock.

8334-306 METAL-PIPE COMPRESSOR(metal stamp., press. & coat.) DPT:664
GED: 3 SVP: 3 EC: O PA: H 4

Operates equipment to compress galvanized corrugated circular metal pipe into oval shape, and inserts and tightens wire struts to maintain compressed shape:

Reads job order for pipe specifications. Directs mobile-crane operator in moving pipe from storage area and placing pipe on bed of compressing frame. Fastens hooks of ratchet chains to frame sides.

Compresses pipe, by manually operating ratchet handle to pull in sides of frame. Measures across small pipe diameter, using rule. Inserts wire struts through opposing holes in walls of compressed pipe and tightens wire by crimping ends, using portable machine. Trips ratchet on chains to release frame sides. Directs mobile-crane operator in removing pipe and placing section in storage.

8334-310 SCRAP-METAL-SHREDDER TENDER(iron & steel)

DPT:685

GED: 3 SVP: 3 SVP: 1 5 PA: M 4 5 7

Tends scrap-metal-shredding machine that fragments metal, such as compressed automobile bodies into small pieces: Switches on relays, motor and hydraulic equipment and observes gauges and dials to prepare equipment for operation. Presses buttons to start and control burners, conveyors, hydraulic pumps, shredders and exhaust fans. Lowers lever to dump scrap metal from hopper onto conveyors leading to shredders. Pulls lever to operate rejector that clears jams. Observes movement of material through different phases to prevent blocking. Stops machinery when alarm bell warns of malfunction. Performs minor maintenance on shredder equipment by aligning conveyors, changing fuses and repairing hydraulic leaks.

8334-314 HOOP BENDER(metal stamp., press. & coat.)

DPT:684

GED: 2 SVP: 3 EC: 1 PA: H 4 7

Bends and shapes metal rods into hoops for wooden vats or tanks, using bending machine: Loosens nut of adjusting block and positions roller to obtain specified diameter of hoop. Inserts end of rod through feed rollers and over bending roller by striking end of rod with wooden maul to start rod over roll. Turns handcrank of feed roller to force rod through machine, bending rod into semi-circular or circular shape. Removes shaped hoops from machine and stacks them on floor. Threads ends of rods, using hand dies, and screws connectors on end of rod. Makes two-piece hoops for large tanks.

8334-318 WIRE-SCREEN CUTTER AND TRIMMER (wire prod.)

DPT:684

screen cutter and trimmer.

GED: 2 SVP: 3 EC: 1 PA: M 4 7

Cuts and trims wire screening or wire fabric to specified dimensions, using hand or powered shears and hone: Measures material to locate specified point of cut, using rule, scale, pattern or jig. Cuts material following line between parallel wires of weave or along edge of pattern. Hones cut edges to remove burrs and even tips of wires, using hand hone. Examines edges of screen and tips of wires, using magnifying glass. Cleans or polishes finished workpiece to remove tarnish, using cleaning solution, polishing wheel or polishing cloth. May hold workpieces in position for brazing. May solder edges of screen or wire cloth to form seam, using seaming machine.

8334-322 SCRAP-METAL-CRUSHER TENDER(iron & steel)

DPT:665

GED: 2 SVP: 3 EC: B 5 PA: M 4

Tends hydraulic crusher that compresses scrap metal, such as automobile bodies into bales: Signals crane operator to place scrap metal on feed ramps. Pulls levers to activate rams that compress metal into bales of specified thickness. Pushes levers to raise rams and repeats operation. Observes hydraulic pressure, motor oil pressure and temperature gauges to ensure efficient operation of compressing machine. Oils, greases and performs minor repairs on compressor, using hand tools.

8334-326 BENDING-MACHINE TENDER(metal stamp., press. & coat.)

DPT:685

GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Tends bending machine to bend metal bars, rods, angle iron and tubes to specified angle or contour: Positions workpiece against end stops. Locks holding clamps and guide clamp onto workpiece. Lubricates workpiece with oil. Pulls lever

or depresses pedal to activate turntable which draws workpiece through guide clamp and around die block until stopped by plug stops. May slide mandrel into tubing instead of using guide clamp. May perform other fabricating tasks, such as flaring tube ends, using tube flares, or cutting metal stock to length, using power shear or saw. May be designated according to type of stock bent; for example, Rod-Bending-Machine Tender Tube-Bending-Machine Tender

8334-330 HYDRAULIC-CORRUGATING-MACHINE

TENDER (metal fab., n.e.c.)

DPT:685

bellows corrugator.

GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends hydraulic corrugating machine that corrugates metal tubes used in making bellows: Moves controls of machine to expand corrugating plates or dies and position spacers between plates or dies. Places tube in opening of plates or dies. Pulls levers to close cradle, remove spacers and pump water or other fluid or air into tube forcing tube walls to conform to shape of corrugated plates or dies. May insert rubber tube or bladder inside metal tube when making large diameter, thin-walled bellows.

8334-334 MACHINE TENDER, NUT AND BOLT(wire prod.)

DPT:685

GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Tends one or more automatic machines to head, trim, roll-thread, slot, or tap metal stock to produce nuts, bolts, or other fasteners: Feeds stock to machine individually by hand, or fills machine-dispensing hoppers, or loads coiled steel on reel and threads end of coil through feed rolls. Starts machine and observes operation. Measures parts, using rule or fixed gauge, to determine conformance to specifications. Frees feed mechanism of jams, using rod. Stops machine and notifies supervisor of machine malfunctions, or when parts do not conform to specifications. May install cutting tools on machine, using wrench and rule. May be designated according to type of machine tended; for example, Tapping-Machine Operator, Automatic

8334-338 POWER-SHEAR TENDER(metal stamp., press. & coat.)

DPT:685

shearman.

GED: 2 SVP: 3 EC: 1 5 6 PA: M 4 7

Tends power shear to cut metal objects; such as, sheets, plates, billets and bars to specified length: Lifts workpiece, manually or with hoist or crane, onto machine bed or roller table. Positions workpiece against side guides and end stops or aligns lay-out lines under shear blade. Starts machine that clamps workpiece and lowers blade to cut metal. May tend shear on production line where shear is fed by conveyor, such as automobile-frame line or rolling mill. May position stops according to calibrated gauge on machine to shear items, such as scrap, billets or reinforcing rods. May be designated by type or purpose of shear; for example, Alligator-Shear Tender Gate-Shear Tender Hot-Billet-Shear Tender Scrap-Shear Tender Square-Shear Tender

8334-342 PRESS TENDER, PIERCE AND SHAVE(scient. & ind. equip., n.e.c.)

DPT:685

press operator, pierce and shave.

GED: 2 SVP: 3 EC: 1 5 PA: S 4 7

Tends automatic press that pierces and shaves metal clock and instrument parts, such as plates and bridges: Cleans work plate of press with blast of compressed air. Selects designated components and positions these one at a time, in recess or over protruding pins of work plate. Starts press that automatically pierces and shaves component. Removes component from press and spot-checks hole dimensions and locations, using pin and location gauges. May operate hand powered or kick presses to assemble components by staking, press-fitting or crimping.

- 8334-346 SPRING WINDER**(metal fab., n.e.c.) DPT:685
spring coiler.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tends machines that wind, shape or finish compression, tension, torsion and flat coiled springs:
Threads end of wire or strip between guide blocks or rolls and through slot in spindle of lathe-type coil-winding machine. Starts machine to rotate spindle that winds wire on mandrel to form coiled-springs. Slides loop of flat-spring-metal stock over arbor of spring winder and starts machine to wind metal around arbor to form coiled-flat springs. Cuts end of wire and removes springs from machine. Measures springs for conformance to specifications, using gauges and micrometers. Inserts compression type springs into holding device of double-disk grinder and starts machine that automatically grinds spring ends. Positions coiled-tension springs on jig press that crimps, hooks or loops ends of coiled springs. Presses and turns spring ends against abrasive wheel to remove burrs.
May feed automatic shear or punch to cut wire or strip to specified length. May specialize in winding specific types of springs and be designated accordingly; for example,
Door-Spring Winder
Furniture-Spring Maker
Hairspring Winder
Valve-Spring Winder

- 8334-350 TURRET-PUNCH-PRESS TENDER, TAPE CONTROL** (metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: H 4 7

Tends tape-controlled turret-punch press that automatically positions indexing table, selects punch and punches holes or lay-out marks in metal sheets, plates, strips or bars:
Studies drawings, tooling specifications and charts to determine sequence of operations and to set machine controls. Selects and inserts electronic tape in read unit. Positions table or head to start point of machining cycle. Installs specific punch and die sets into machine turrets in specified sequence, using hand tools. Positions and clamps workpiece against fixtures, using air-operated foot controls. Starts machine and observes operation, particularly machine ejection of punched metal slugs which may cause machine jamming. Replaces worn or broken punches and dies by opening chucks, using wrench.
May verify first-run workpiece, using rule and plug gauges.

- 8334-354 DRUM STRAIGHTENER**(metal stamp., press. & coat.) DPT:685
barrel repairman.
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends pre-set machine, equipped with special rolls, to remove dents and re-form bodies and chimes (rims) of metal barrels or drums:
Slides open end of barrel over cylinder of machine. Operates foot lever to lower rolls against barrel. Starts machine that rotates barrel against rolls to re-form or straighten side, bead, or chime. Raises rolls and slides straightened barrel off cylinder.

- 8334-358 FORMING-ROLL TENDER**(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends forming-roll machines to straighten or form contours in sheets, trim and bead edges of metal cylinders and rings, or crimp or seam lids on containers:
Positions workpiece on automatic-feed table by hand. Starts machine to press forming-wheels against workpiece to shape it to contour of dies. Manipulates hand or foot lever which forces dies against edge of workpiece to bend edge to form bead, or to lower crimping head onto edges of workpiece. Tends machine equipped with jointed shaft or vertical table to tilt and force workpiece at angle to expand outer edge or form flanges of specified shape. Operates machine equipped with multiple sets of opposing rolls to form contours by expanding and impressing metal simultaneously at different locations.
May pull lever to lower slit or knife to trim edges of workpiece. May be designated according to type of machine tended: for example,
Beading-Machine Operator
Roll-Flanging-Machine Operator
Seaming-Machine Operator

- 8334-362 MULTI-OPERATION-FORMING-MACHINE TENDER** (metal stamp., press. & coat.) DPT:685
forming-mill operator.
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends previously set-up multiple-operation machine that performs any combination of bending, punching, roll forming, beading, cutting, welding, soldering, or clinching of metal to fabricate items; such as, rims, moulding, panels, cans, tubing and housings:
Places roll of metal sheet, strip or wire onto feed rack and threads end of strip(s) into drive rolls or through machine. Positions metal blanks manually into feed rolls, or feeds blanks into hopper or onto conveyor. Starts machine, observes operation and verifies finished product, visually or with fixed gauges.
May tighten bolts or turn knobs or handwheels to specified points on scale or dial to reset and maintain original set-up on machine. May tend one or more work stations on line of machines operating in tandem. May be designated according to function of machine; for example,
Can-Bodymaker Feeder
Tinware-Collar-Band-Machine Tender

- 8334-366 POWER-PRESS TENDER**(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 2 EC: 1 5 6 PA: M 4 7

Tends one or more power presses that cut, trim, punch, shape, notch, draw, stamp or crimp metal or other stock between preset dies:
Positions workpiece against fixtures or stops on machine bed or positions it under die. Starts machine and depresses pedal or moves lever to force die through workpiece to cut or form article of specified size and shape. Inspects parts visually or with fixed gauges.
May be designated according to product worked on or type of press tended; for example,
Draw-Press Tender
Mop-Bending-Machine Tender
Punch-Press Tender
Trimming-Machine Tender

- 8334-370 SCROLL-MACHINE TENDER**(struct., plate & ornam. metal) DPT:685
scroll former.
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that forms metal stock, such as bars, rods, squares, tubing and wire into ornamental scrolls:
Positions and locks specified die onto shaft of machine, using key and nut. Slides workpiece through drag rolls and positions it in slot on die. Starts machine that turns die to draw workpiece along its contour as horizontal or vertical rod pushes workpiece to side of die, forming scroll.
May tend power shear or cut-off saw to cut stock to specified length.

- 8334-374 SHADOW-MASK SHAPER**(electronic equip.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends equipment that forms metal aperture masks to specified dimensions, for use in colour television picture tubes:
Adjusts hand screw to set specified clearance between series of rollers as indicated on roller gauge. Starts rollers and feeds metal blank through rollers to flatten workpiece. Positions workpiece on bed of forming press and moves controls to lower die to form mask. Removes mask from press, using tweezers to hold edge to avoid distortion and places mask on conveyor for further processing.

- 8334-378 SPINNING-LATHE TENDER, AUTOMATIC**(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends automatic lathe that spins (forms) shaped articles from sheet or plate metal:
Places metal workpiece (disk) vertically in holding fixture by pushing lever to move tailstock, forcing disk against chuck of lathe. Slides hydraulic carriage forward to position circular forming tool against metal disk. Starts machine that presses rotating circular tool against disk to form disk into shape of spinning chuck. Trims off excess metal

from workpiece, using cutter knife. Removes shaped article and verifies dimensions, using fixed gauge.

8334-382 STRIP-ROLL-FORMING-MACHINE

TENDER(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends machine that forms longitudinal bends, rolls, beads or embossed designs onto continuous sheet metal strips to form items, such as moulding, weather stripping and curtain tracks: Bolts specified roller dies onto prepositioned spindles. Loads coils of metal strip onto feed rack manually. Turns knob to set footage meter and control to stop machine or activate automatic shear. Inserts end of strip(s) into machine feed rolls. Starts machine to form strip and cut it to specified length. Removes bundles of cut and finished pieces from machine. Inspects finished pieces visually or using fixed gauge. May weld ends of feed coils together to form continuous feed, using automatic-butt-resistance welder.

8334-386 TWISTING-MACHINE TENDER(struct., plate & ornam. metal) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends machine that twists metal bars, squares and slats to specified shape: Clamps end of workpiece into stationary holding fixture. Slides carriage, lowers table or raises spindle to adjust to length of workpiece and clamps other end of workpiece into chuck or fixture of drive spindle. Starts machine to rotate drive spindle and stops machine after specified number of turns, or sets limit switch to stop machine. Examines finished work for conformance to specifications. May install special fixtures and chuck to twist together two or more pieces. May clamp end of workpiece in vise, slide pipe over workpiece to prevent longitudinal warping, and twist workpiece, using pipe wrench or twisting fork. May be designated according to product twisted; for example, Slat Twister

8334-390 KNURLING-MACHINE FEEDER(misc. prod. fab., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Feeds battery of automatic machines that roll knurled knob of snap fastener stud to facilitate gripping action of spring part: Fills machine hoppers with blank studs, using scoop. Presses button to start machines that roll studs between curved segments of dies. Extracts jammed or bent studs from hopper, feeder tube or die groove, using pick or prongs. Examines studs to verify knurling of knob and to detect cracks. Cleans dirt from die segments and feed channels, using brush. Notifies supervisor of machine malfunctioning. Empties receiving pan containing finished product into production boxes.

**8335-WELDING AND FLAME CUTTING
OCCUPATIONS**

This unit group includes occupations concerned with joining, surfacing, cutting or otherwise fabricating and repairing ferrous and non-ferrous metal parts and structures. Activities include: setting-up and operating gas or electric welding, soldering, brazing and cutting equipment, and joining or shaping lead products or parts, using a gas torch.

**Welding Occupations
8335-110 through 8335-174**

8335-110 WELDER SET-UP MAN, RESISTANCE(mach., weld. & forg.) DPT:360
set-up man, resistance welding.
GED: 4 SVP: 7 EC: 1 5 6 PA: M 4 5 6 7

Sets up resistance welding and brazing machines that fuse or bond metal components, such as panels, frames, yokes, tubes and containers, according to specifications and drawings:

Lays out and marks weld points and position of components on workpiece, using rule, square, templates and scribe. Selects, positions, aligns, and bolts electrodes, jigs, holding fixtures, guides and stops onto machine, using measuring instruments and hand tools. Sets and synchronizes electric current, pressure, timing cycle, automatic feed and transfer equipment specified by welding machine chart or work record. Computes and records setting for new work, applying knowledge of metal properties, principles of welding and shop mathematics. Makes trial weld. Adjusts electrode gap and feed rollers to thickness of metal. Dresses electrodes, using file, emery cloth or dressing wheel. Gives direction to operators concerning operation of machine.

May inspect electrical circuits of machine and perform maintenance tasks such as replacing defective tubes and relays. May set up welding stations on production lines. May set up spot, multispot or butt-welding machine and be designated accordingly.

8335-114 WELDER-FITTER(mach., weld. & forg.) DPT:381
welding lay-out man.
GED: 4 SVP: 7 EC: B 5 6 7 PA: H 3 4 7

Fits and welds pre-fabricated, cast and forged metal components to assemble structural forms, such as machinery frames, tanks, pressure vessels, furnace shells and building and bridge parts: Selects tooling and plans layout, assembly and welding operations, applying knowledge of geometry, physical properties of metal, effects of heat, allowance for thickness, machining, weld shrinkage, and welding techniques. Lays out, positions, aligns and fits components together, using square, scribe, scale, straightedge, files and grinders. Bolts, clamps and tack-welds parts to secure them in position for final welding. Sets up equipment and completes final welding of components, using arc, gas-shielded arc, submerged arc or gas-welding equipment. Assembles some parts by fastening with bolts or rivets. Repairs metal products by dismantling, straightening, reshaping and reassembling parts, using cutting torch, straightening press and hand tools.

May set up and operate arc or flame-cutting equipment to shape metal components to specified dimensions.

8335-118 WELDER, TOOL AND DIE(mach., weld. & forg.) DPT:381
GED: 4 SVP: 7 EC: 1 5 6 7 PA: M 3 4 7

Fits, aligns and welds components of metal tools, dies, jigs and fixtures as specified by drawings and work orders, using a variety of welding equipment:

Selects equipment and plans assembly and welding, applying knowledge of geometry, welding techniques, physical properties of metal, allowances for machining and weld shrinkage. Lays out components on bench, in vise, base block or fixtures, using vernier, squares, gauges, feelers and micrometers. Scrapes, files and grinds parts to fit them together, using grinder, emery-cloth, hand files and scrapers. Bolts, clamps and tack-welds parts to secure them in position for welding. Sets up welding equipment such as electric arc, gas-shielded arc, submerged arc or gas, selecting method best suited for workpiece. Welds broken parts and adds weld metal to damaged or worn parts to repair tools, dies, jigs and fixtures. Heats and anneals parts after welding to remove internal stress, using hand torch or furnace.

8335-122 WELDER, PRESSURE VESSELS(mach., weld. & forg.) DPT:681
boiler welder; pressure-vessel welder.
GED: 3 SVP: 7 EC: 1 5 6 7 PA: H 2 3 4 6 7

Welds metal plates, shells, tubes, drums and structures to assemble and repair boilers and pressure vessels to meet pressure test standards: Prepares metal for welding by cleaning or degreasing, using wire brush, portable grinder or chemical bath. Positions and clamps workpieces together or assembles them in jig or fixture. Tack-welds assemblies together to hold in position for welding. Selects electrode according to bead and thickness of metal to be welded and inserts it into portable holder. Connects cables from power supply to workpiece to obtain desired polarity, starts power supply, and adjusts machine controls to give specified amperage and voltage output. Strikes (forms) arc which generates heat to melt and deposit metal from electrode to workpiece and fuse edges of workpiece. Guides electrode along weld line maintaining length of arc, electrode angle and speed of movement to form specified depth of fusion and bead as judged from colour of

metal and size of molten puddle. Listens for excessive sputter which may indicate faulty manipulation, arc action or damp electrode coating which could result in poor welds. Examines weld for size of bead and penetration and conformance to established standards of precision. Repairs broken parts, fills holes and increases size of metal pores. Chips or grinds off excess weld, slag or splatter. Welds in horizontal, vertical and overhead welding positions.

May use carbon electrode and manually apply filler rod to supply metal for fusing. May preheat workpiece using hand torch or heating furnace. May flame-cut metal plates or structural shapes, using flame-cutting machine or hand torch.

8335-126 WELDER, COMBINATION(mach., weld. & forg.) DPT:664
welder, gas and arc.
GED: 3 SVP: 7 EC: B 5 6 7 PA: H 3 4 6 7

Welds metal parts together to fabricate or repair parts and equipment, using gas and arc welding equipment:

Cleans grease and corrosion from workpiece, using solvent, wire brush and portable grinder. Examines workpiece for defects. Chips or grinds away metal around cracks and joints in workpiece to enable complete fusing of weld. Heats and straightens bent pieces, using torch, hammer, tongs and anvil. Positions and clamps parts together in vise, jig or holding fixture preparatory to welding. Connects hoses to gas supply and selects torch tip or inserts electrode into portable holder and clamps cable to workpiece. Sets pressure gauges on gas supply lines or sets current and voltage levels on power supply. Opens gas valves on torch, ignites torch, and adjusts oxygen and fuel gas mixture to provide proper flame or strikes arc and guides torch or electrode along weld line at proper rate and angle. Builds up parts by welding layers onto worn or damaged areas. Removes slag splatter and excess weld, using chipping hammer, wire brush and portable grinder. Welds in flat, vertical or overhead welding positions. Cuts metal shapes, using flame-cutting torch. Gives directions to other workers helping with welding activities.

May layout, fit and align metal parts, using chalk, scribe, center punch and square.

8335-130 WELDING-MACHINE OPERATOR, GAS-SHIELDED ARC(mach., weld. & forg.) DPT:682
GED: 3 SVP: 6 EC: I 5 6 7 PA: M 4 7

Operates arc-welding machine fitted with welding gun which blows inert or non-combustible gas, such as helium, argon or carbon dioxide, over arc to prevent oxidation of metal in weld area during welding of fabricated parts of metal products:

Positions and clamps workpiece so that welding gun is over weld line. Threads specified electrode wire from reel through automatic feed rolls and welding gun. Turns welding gun to set angle of electrode. Turns knobs to select specified amperage and to synchronize feed of electrode wire with speed of welding action. Connects hose from gun to gas cylinder. Starts machine and observes welding action. Examines weld for adherence to specifications. Adjusts machine set up to vary size and penetration of bead.

May operate machine equipped with gun holding non-consumable tungsten electrode. May be designated according to process; for example,

Welding-Machine Operator, Metal-Inert Gas

Welding-Machine Operator, Tungsten-Inert Gas

8335-134 WELDING-MACHINE OPERATOR, SUBMERGED ARC(mach., weld. & forg.) DPT:682
welding-machine operator, automatic.
GED: 3 SVP: 6 EC: I 5 6 7 PA: M 4 7

Operates arc-welding machine equipped with welding gun which blows granular flux on workpiece weld area to prevent oxidation of metal during welding of fabricated metal parts:

Clamps workpiece onto machine bed. Positions weld line parallel to carriage and turns crank to align electrode on welding head(s) over weld line(s) to weld linear joints, or adjusts radial arm length to weld radial joints. Clamps cylindrical workpieces onto turning rolls under stationary head to weld circular joints. Threads specified electrode wire from reel, through feed rolls and welding head. Turns welding head to position electrode at desired angle. Fills hopper with specified flux and directs flux nozzle or gravity feed over weld line. Connects hose between compressed air source, flux tank and gun. Adjusts controls to provide specified current and to synchronize feed of

electrode wire and flux with speed of welding action. Positions vacuum hose behind weld to reclaim surplus flux. Sets limit switch to automatically stop machine at end of weld. Starts machine and observes welding action and readjusts machine setup to vary size and penetration of bead. Examines welds for adherence to specifications and frequently rewelds defective joints, using hand welding equipment. Installs track template to weld irregular shaped joints and makes trial run before welding. Records setup and operating data. Removes slag and spatter using wire brush, portable grinder and hand scraper.

May tack weld workpieces together. May preheat workpieces in furnace or with blow torch.

8335-138 WELDER, ARC(mach., weld. & forg.) DPT:684
arc welder, hand; welder, shielded-metal arc.
GED: 3 SVP: 6 EC: B 5 6 7 PA: H 3 4 6 7

Welds metal parts together to fabricate or repair parts and equipment, using arc welding equipment:

Clean, chips and grinds cracks and joints in workpieces, using solvents, wire brush, chisel or portable grinders, preparatory to welding. Positions and clamps workpieces together, assembles them in jigs and fixtures or tack welds together for final welding. Selects electrodes according to type and thickness of metal to be welded. Connects cables from power supply to workpiece observing correct polarity. Starts power supply and adjusts machine controls to give amperage and voltage output to suit electrode being used and type and thickness of metal in workpiece. Strikes electrode on workpiece and guides it along weld line at required arc length, electrode angle, speed and weaving motion to melt and deposit metal from electrode to workpiece, producing fusion of metal. Achieves specified depth of fusion by observing colour of metal and size of molten puddle. Listens for excessive sputter which may indicate faulty manipulation, arc action or damp electrode coating which could result in poor welds. Examines weld for size of bead and penetration. Welds in horizontal, vertical and overhead welding positions. Chips and grinds excessive weld, slag or splatter.

May mark off metal shapes for cutting and welding, using templates or specifications. May cut metal plates or structural shapes, using oxy-acetylene flame-cutting machine or hand cutting torch. May preheat certain types of workpieces, using oxy-acetylene torch, blow torch or forge to relieve strains and prevent cracking of metal.

8335-142 WELDER, GAS(mach., weld. & forg.) DPT:684
GED: 3 SVP: 6 EC: B 5 6 7 PA: H 3 4 7

Welds metal parts together to fabricate or repair parts or to build up worn parts, using gas welding equipment:

Prepares workpiece for welding by cleaning or degreasing, using wire brush, portable grinder or chemical bath. Lays out, positions and tack-welds workpieces or uses jigs, fixtures or clamps to hold parts in alignment for welding. Selects torch tip, filler rod and flux according to welding charts or thickness or type of metal and specified bead. Connects torch hoses to oxygen and acetylene, natural gas or hydrogen tanks. Opens tank valves and adjusts hose-line pressures, lights torch and adjusts fuel-oxygen ratio to obtain desired size and colour of flame. Holds torch at proper angle to and distance from workpiece and applies filler rod to form weld along weld line in horizontal, vertical or overhead welding positions. Examines weld for bead size and penetration. Preheats some types of workpieces in furnace or with torch to relieve and prevent internal strain caused by heat. Performs brazing and flame cutting operations. Chips and grinds off excess weld, slag or spatter.

May be designated according to type of fuel-gas used; for example, Welder Oxy-Acetylene
Welder Oxy-Hydrogen

8335-146 TACK WELDER, ASSEMBLER(mach., weld. & forg.) DPT:684
fit-up-man, welding; tacker.
GED: 3 SVP: 5 EC: B 5 6 7 PA: M 3 4 7

Assembles and tack-welds components of metal equipment and structures, such as frames, bases and machinery parts, at points specified along edges of parts to hold them in place for final welding: Reads specifications such as drawings and work orders or uses templates to obtain dimensions and shape of metal parts. Examines parts and removes rough spots, burrs and surplus metal with files and portable grinder. Measures and marks locations for layout on metal

castings, forgings and metal stock, using rule, square, scribe, center punch and chalk. Positions and fits parts in jig, using hoist, jacks, shims, fire brick and hand tools. Clamps parts and verifies assembled position, using straightedge, square, rule and calipers. Tack-welds components together in preparation for final welding, using gas, shielded arc or arc-welding equipment. Conveys equipment and materials to work area, and completed assemblies from work area, using crane.

8335-150 WELDER, GAS-SHIELDED ARC(mach., weld. & forg.) DPT:684
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 3 4 6 7

Welds ferrous and non-ferrous metal, using equipment which introduces shield of inert gas around electric arc to prevent oxidation of metal in weld area during welding:
Selects and installs gas orifice and threads consumable wire electrode through portable welding gun. Connects hose from non-combustible gas tank to gun. Adjusts controls to select gas pressure, electric current and rate of feed for wire electrode, according to different thicknesses and types of metal. Connects cables from welding unit to workpiece and welding gun. Strikes arc and manually guides electrode wire tip along weld line. Controls speed of forward travel, torch angle, lateral movement (weaving) and distance of electrode from workpiece.
May weld, using non-consumable tungsten electrode equipped with automatic filler wire feed or apply filler rod by hand. May be designated by process used; for example, Metal-Inert Gas, Welder Tungsten-Inert Gas, Welder Welder, Heliarc

8335-154 WELDER, SUBMERGED ARC(mach., weld. & forg.) DPT:684
GED: 3 SVP: 5 EC: B 5 6 7 PA: H 3 4 6 7

Welds metal parts together to fabricate or repair parts, using handgun or crawler-type gun which feeds bare electrode wire into welding zone through blanket of powdered flux that shields weld zone from oxidation during welding:
Cleans metal workpieces for welding, using wire brush, portable grinder or chemical bath. Positions and clamps workpieces together, assembles them in jig or fixture, or tack-welds them in preparation for final welding. Connects hoses of air compressor, drier, flux tank and welding gun. Turns knobs to select correct amperage and voltage, set speed of automatic feed of electrode and regulate amount of granulated flux sprayed onto workpiece. Presses trigger to start gun and strikes (forms) arc. Manually guides gun along weld line in horizontal plane only, synchronizing speed with feed of electrode and spray of flux, or turns knobs to synchronize drive wheel with gun action.
May use hollow-tube electrode containing flux.

8335-158 WELDER, RESISTANCE, BUTT(mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 6 PA: L 4 7

Operates resistance butt-welding machine to fuse metal articles such as automobile trim, wire ends and refrigerator racks:
Positions and bolts jigs, stops and electrodes to welding machine, using hand tools. Sets parts in jig, adjusts electrical current and moves controls to place electrodes in contact with workpiece and workpieces in contact with each other. Operates controls to start and time flow of electrical current to heat ends of workpieces. Pulls lever to press heated ends together under pressure, for specified time to fuse them.
May move lever to arc current between workpieces, maintain arc for specified time and press heated ends together to fuse metal.

8335-162 WELDER, RESISTANCE, SPOT (mach., weld. & forg.) DPT:682
GED: 3 SVP: 4 EC: I 6 PA: M 4 7

Operates resistance spot-welding machine to fuse together two or more overlapping metal parts:
Sets air and hydraulic pressure, amperage and fusion time according to specified type of metal, welding and assembly instructions. Selects, installs and adjusts electrodes. Aligns workpieces, using square and rule and secures them in jig or with clamps. Depresses pedal to close electrodes on workpiece for specific time to fuse metal at point of

contact. Cleans electrodes with file or emery cloth. Makes peel (separation) test and visually inspects finished work.
May operate machine equipped with two or more electrodes which weld at several points simultaneously and be designated accordingly, Welder, Resistance, Multiple Spot

8335-166 WELDER, PRODUCTION LINE (mach., weld. & forg.) DPT:684
welder, production line, combination.
GED: 2 SVP: 4 EC: I 5 6 7 PA: M 4 7

Welds metal parts on production basis, using previously set up gas- or arc-welding equipment:
Positions and clamps workpieces in jigs or fixtures. Opens valves to release fuel gas and oxygen and ignites mixture, or inserts specified electrode into portable holder, clamps cable onto workpiece or jig and strikes arc. Guides electrode or torch and filler rod along horizontal weld line at specified speed and angle to melt and deposit metal from filler rod or electrode into molten puddle on workpiece. Tack-welds at designated spots to secure workpieces for other welders.
May be designated according to welding process used; for example, Welder, Production Line, Arc Welder, Production Line, Gas

8335-170 RESISTANCE-WELDER TENDER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: H 4 7

Tends any previously set-up spot, butt or seam resistance welding machine to join metal components such as brackets, panels, mouldings, tubes and wire products:
Lifts and positions workpieces into jigs, fixtures, locating holes or holding clamps on machine. Moves controls to clamp workpieces in position, contact electrodes with workpiece, start electric current, and join weld points of workpieces. Holds machine control for specified time to fuse metal by pressure and heat generated by resistance of electric current at weld point. Dresses electrode tips, using grinder, emery cloth or file.
May tend machine which automatically breaks current and pressure. May position strip or wire between weld points to bond workpieces together. May be designated according to process or type of machine used; for example, Brazer, Resistance Welder, Resistance, Seam

8335-174 WELDER, RESISTANCE, HAND (mach., weld. & forg.) DPT:684
spot welder, portable.
GED: 2 SVP: 2 EC: I 5 6 PA: M 3 4 7

Welds overlapping, prepositioned components, using portable spot welding gun to fabricate sheet metal assemblies such as automobile and snowmobile bodies, panels and refrigerator shells:
Positions and clamps electrode under overlapping edges of workpieces. Presses electrode of gun against workpiece at specified weld points to complete circuit between electrodes and heat metal to fusing temperature. Removes electrode after specified period of time. Adjusts amperage depending on thickness of metal.
May position and clamp workpieces together.

Brazing and Soldering Occupations 8335-194 through 8335-246

8335-194 BRAZING-MACHINE SET-UP MAN(mach., weld. & forg.) DPT:360
GED: 4 SVP: 7 EC: I 5 6 PA: M 4 5 6 7

Sets up a variety of brazing machines which braze (bond) or solder metal components together, following layout and other specifications:
Selects, positions, aligns and bolts holding fixtures, guides and stops onto machine, to position and hold workpieces, using measuring instruments and hand tools. Selects and bends tubing and wire to form heating coils, installs coils, and turns knobs to set electric current when setting up induction-brazing machine. Connects hoses from tanks of oxygen and fuel gas, such as acetylene or natural gas, to one or more welding torches. Selects and installs nozzles on torches. Turns knobs and installs gears and cams to set timing devices which shut off

electric current or gas pressure and synchronize conveyor or table with brazing action. Fills cooling coils with water to cool workpieces after brazing. Installs ejecting fixtures on machine to eject completed workpieces. Makes trial runs, readjusts machine, and records set-up data. Gives directions to operators concerning operation of machines. May be designated according to type of brazing machine set up; for example,

Set-Up Man, Flame-Brazing Machine
Set-Up Man, Induction-Brazing Machine
Set-Up Man, Resistance-Brazing Machine

8335-198 INDUCTION-BRAZER OPERATOR(mach., weld. & forg.) DPT:682
GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Operates induction heating equipment to braze (bond) together metal components, according to layout or other specifications:

Positions and clamps fixtures and stops into machine, using square, rule, or template. Selects heating coil which outlines joint to be brazed or connects holding fixture to electrode. Screws coil to electrode, using brass screws. Adjusts electrical current for type and thickness of metal by turning knobs and referring to data charts. Places wire, strip or preformed piece of brazing alloy over edges of components and brushes flux along seams to be joined. Assembles and positions workpieces into holding fixture. Starts electric current in coils to heat workpiece and melt alloy, using foot-controlled switch. Turns off current and allows workpiece to cool or directs stream of water or air onto workpiece. Removes workpiece, using tongs or tweezers when brazed metal has solidified as indicated by colour.

May set timing control to shut off current automatically when not using foot switches. May anneal finished workpiece to relieve internal stress. May dip workpiece into chemical or hot water bath to remove impurities and flux. May bond workpieces together with soft solder and be designated accordingly,
Solderer, Induction

8335-202 BRAZER, GAS(mach., weld. & forg.) DPT:684
torch brazer.
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 3 4 7

Brazes (bonds) together metal parts to fabricate or repair parts, using gas welding equipment:

Examines drawings, work order, layout or defective parts to determine specifications or repairs required. Cleans surface of workpiece, using wire brush, file, portable grinder, scraper or by dipping workpiece into cleaning solution. Aligns and clamps components together, using rule, square or template or sets up and places them in fixtures, jigs or vise. Selects flux, torch tip and brazing alloy rods according to type of metal or data on charts or work order. Installs torch tip and connects hoses from torch to tanks of oxygen and fuel gas such as acetylene or natural gas. Opens tank valves, regulates hose pressures by observing and adjusting gauge settings, lights torch and adjusts gas mixture to obtain desired colour and size of flame. Brushes flux onto workpiece or dips heated tip of braze rod into flux, to promote bonding. Guides and manipulates torch and rod along joint or seam to heat to brazing temperature and melt braze alloy to bond workpieces together. Builds up worn surface by melting rod over worn area to restore it to original dimensions or prepare it for machining to original dimensions. Visually examines product or salvaged part and tests for leaks or voids in seams, using water or compressed air.

May braze seams of metal sheets, strips, screening or wire cloth, using torch mounted on crawler.

8335-206 BRAZER, FURNACE(mach., weld. & forg.) DPT:682
solderer, furnace.
GED: 3 SVP: 4 EC: I 3 6 PA: M 4 7

Operates electric, gas or oil-fired furnace to braze (bond) or solder metal components, as specified by sketches, charts and work orders:

Adjusts furnace and cooling chamber temperatures and timer setting, specified for type of metal and brazing or soldering alloy by turning knobs and observing recording instruments, gauges and pyrometer. Aligns components and clamps them together, or positions them in holding fixtures under specified pressure. Brushes on flux and places wire or preformed pieces of brazing or soldering alloy over joints. Places workpieces into furnace, onto conveyor or into containers, such as baskets, trays or retorts and loads containers into furnace, manually

or with hoist. Transfers workpieces from furnace to cooling chamber, using pole, hook or by turning cranks.

May operate brazing furnace equipped to introduce reducing gas, such as hydrogen or ammonia or mixture of gases which remove oxides and prevent oxidation of metal during brazing, and be designated accordingly; for example,

Brazer, Controlled-Atmospheric-Furnace
Hydrogen-Braze-Furnace Operator

8335-210 BRAZING-MACHINE OPERATOR(mach., weld. & forg.) DPT:682
flame-brazing-machine operator.
GED: 3 SVP: 4 EC: I 3 6 7 PA: M 4 7

Operates flame-brazing machine to bond components of metal products:

Selects torch tips, braze alloy and flux according to type and thickness of metal, as specified by work orders or data charts. Screws tips in torches. Positions and clamps torches at specified distance and angle to workpiece. Aligns and clamps holding fixtures and workpieces to machine bed, or conveyor, using rule, square and hand tools. Fills hoppers with flux and positions spout to direct flow, or manually brushes flux onto seams of workpieces. Loads reel of brazing wire onto machine holder and threads end through automatic feed rolls, or positions preformed pieces of braze alloy along seams of workpiece, or manually applies alloy to seams during brazing. Connects hoses from oxygen and fuel gas tanks to torches. Opens valves to start flow of gases, lights torches and adjusts gas mixture to obtain flame of desired size and colour. Turns knobs to synchronize movement of conveyor table with feed of wire, flux and brazing action. Starts machine which moves workpiece to flame or moves torch to workpiece, to melt alloy into seams. Removes and examines finished product for defective bond.

May dip workpieces into water or acid bath to cool and clean them. May manipulate levers or crank to control movement of machine. May bond workpieces with soft solder and be designated accordingly,
Soldering-Machine Operator

8335-214 SOLDERER(mach., weld. & forg.) DPT:684
solderer, production line.
GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Solders together metal components to fabricate or repair items, such as musical instruments, electrical devices and containers, using soldering iron:

Aligns and clamps parts together, using rule, square or hand tools or positions them in fixtures, jigs or vise, following work orders, diagrams or layout. Dips parts in cleaning solution and files, grinds and brushes parts, and applies flux along seams to prepare them for soldering. Heats soldering iron in gas flame or electric-induction coil, or by plugging it into electrical outlets. Dips tip of iron into cleaning compound and rubs it onto tin alloy to clean and tin it. Guides soldering iron tip along seam to heat workpiece to bonding temperature and melt bar or wire of specified soft solder into seam to solder joint. Removes excess solder, using hand-scraper, files and emery cloth.

May dip workpieces into molten solder or place solder strip between seams and heat seam with iron to sweat them together. May grind, cut, or bend edges to fit fabricated parts together, using power grinder and hand tools. May use hand torch to heat workpiece to facilitate soldering.

8335-218 BODY SOLDERER(motor vehicle) DPT:684
solderer, torch.
GED: 2 SVP: 3 EC: I PA: L 4 7

Fills holes, indentations and seams of automobile and truck bodies with solder, performing any combination of the following duties on production line:

Prepares area to be soldered, using hand and power tools such as chisel, hammer, grinder, sander and wire brush. Brushes acid solution onto area. Heats acid with oxy-acetylene torch by manually moving flame back and forth over area, and wipes surface with rag to remove dirt and excess acid. Rubs stick of solder on heated area and melts solder, using torch. Smooths soldered area with alternate strokes of paddle and torch, leaving soldered section slightly higher than surrounding area for later filing.

8335-222 SOLDERER, JEWELLERY(jewellery & precious metal prod.) DPT:684
GED: 2 SVP: 3 EC: I 6 PA: S 4 7

Solders together parts of new or broken jewellery, using gas torch, solder and flux:
Selects type of solder and flux to be used according to composition of workpiece. Positions parts of workpiece on asbestos board. Lights torch and applies heat, flux and solder to article as needed, to make solder flow and fasten parts together. Immerses workpiece in water to cool and clean off flux.

8335-226 INDUCTION BRAZER, PRODUCTION(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Tends induction heating equipment to braze (bond) together metal components:
Places wire strip or preformed piece of brazing alloy between edges of parts, and brushes flux along seams of workpieces. Assembles and positions workpieces into holding fixtures. Turns on electric current in fixture or prepositioned coil to heat workpiece and melt brazing alloy. Shuts off current or observes automatic shut-off of current and directs stream of water or air onto workpiece or turns handle to fill coil with water to cool workpiece. Removes workpiece, using tongs or tweezers and checks for voids at solder line.
May dip workpiece into chemical or hot water bath to remove impurities and flux.

8335-230 JEWELLERY-SOLDERING-MACHINE TENDER
(jewellery & precious metal prod.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: S 4 7

Tends soldering machine to solder together metal parts of jewellery:
Sets controls to regulate timing and temperature of machine. Inserts metal jewellery piece in jig attached to machine or positions piece on bed of machine, and holds solder against metal part. Depresses pedal to bring electrodes in contact with jewellery parts and solder, or to allow current to flow into stationary electrodes attached to jig. Releases pedal after solder is melted.

8335-234 SIDE-SEAM TENDER(metal stamp., press. & coat.) DPT:685
seaming-machine operator.
GED: 2 SVP: 3 EC: I 3 5 6 PA: M 3

Tends seaming units of automatic-bodymaking machines to solder side-seams on tin-can bodies:
Deposits solder bars in machine reservoir. Fills and replaces flux bottles that supply flux to roller. Skims impurities from solder bath, using ladle. Cleans and adjusts machine, and clears machine of stuck can bodies. Inspects cans to verify that seaming conforms to specifications.
May mix flux, using viscosity cups and measures.

8335-238 SOLDERER, ASSEMBLER(mach., weld. & forg.) DPT:684
GED: 2 SVP: 2 EC: I PA: S 4 7

Solders small metal workpieces together by assembling components and preformed solder, and placing assembly on heated plate:
Assembles metal components and preformed solder, manually or using small arbor press. Verifies assembly, using fixed gauges. Brushes on flux or dips workpiece in flux bath before or after assembly as specified. Places assembly on gas heated steel plate to melt solder. Removes assemblies from plate, using tweezers, and visually inspects for proper solder penetration. Replaces assemblies, lacking properly soldered joint, on heated plate and places acceptable assemblies on tray.

8335-242 SOLDERER-DIPPER(mach., weld. & forg.) DPT:684
GED: 2 SVP: 2 EC: I 6 7 PA: L 4 7

Dips metal parts into molten solder to bond them together:
Dips workpieces into chemical solution or brushes flux along joints to remove impurities. Places solder bars into pot and turns knobs to

specified position to melt solder and regulate its temperature. Bonds parts together, using one of the following methods: 1. Twists, crimps, clamps or holds parts together and dips them into molten solder for specified time. Removes and holds parts together until colour indicates solder has set. 2. Dips parts separately to coat joints with solder and solders them together with hand iron, heating one part and pressing it against another or places clamped parts into furnace. 3. Clamps workpiece into fixture over solder pot and depresses lever to raise level of solder or lower workpiece into solder.
May dip units, such as radiator cores and armatures, using crane or hoist.

8335-246 TYPE-SOLDERING-MACHINE TENDER (mach., weld. & forg.) DPT:685
GED: 2 SVP: 2 EC: I PA: S 4 7

Tends machine that solders typewriter type to type bars:
Clamps type bar and segment-assembly to holding plate of machine. Selects type in designated sequence and positions it between guides or in matrix plate on machine table. Pulls down type bar with fingers and seats end of bar in back slot of type. Applies flux by dipping tweezers in acid and depositing it in back of slot. Applies solder, heat and coolant automatically by depressing foot-control pedal to solder type to type bars. Uses different fixtures for different styles of type.

Lead Burning Occupations 8335-266 through 8335-278

8335-266 LEAD BURNER(mach., weld. & forg.) DPT:384
GED: 3 SVP: 4 EC: I 6 7 PA: M 3 4 7

Burns (fuses) lead or lead alloy, to install and repair items such as leadpipe, floors, tank linings and lead shielding, using gas torch and hand tools:
Compiles layout and dimensional data from drawings, original work and oral instruction. Cuts lead sheets or pipe, using power saws, hand shears or chipping knife. Levels and scrapes edges or surfaces, using hand scraper, and positions parts for burning. Ignites torch and adjusts valves to regulate flame. Fuses sections together by moving flame of torch along overlapping joints or by heating joints with flame and adding lead from rod, applying knowledge of melting characteristics of lead. Varies techniques for flat, vertical and overhead welding positions. Cleans and smooths fused joints, using hand tools, such as scraper, files and hammer. Bonds lead to steel or copper to produce unitized lining or cover, using flux. Places hand-moulding irons on heavy seams or corners to hold them in position. Heats, forms and dresses lead pipes, elbows and parts, using hand tools and torch. Places asbestos strip under butt-seams to prevent heating of supporting surfaces. Pours molten lead into permanent or sand type moulds to cast parts. Melts scrap lead in kettle and casts it into bars for re-use.

8335-270 BATTERY-LEAD-BURNER, MACHINE(mach., weld. & forg.) DPT:685
GED: 3 SVP: 3 EC: I 6 7 PA: L 4 7

Tends lead-burning machine to fuse lead straps to grouped lead plates to form storage-battery elements:
Adjusts machine fixtures and torch according to size of grouped plates to be joined, using hand tools. Opens gas valves, ignites torch, observes pressure gauge and adjusts valves to set flame to specified size and colour. Starts machine and inspects fused elements for lead runs and defective plates and separators. Adjusts flame to correct burning malfunctions. Fuses elements missed by machine, using hand torch. Places specified number of elements in battery box, in prescribed polarity arrangement and inserts shims when necessary.
May load groups of plates in lead-burning machine and fit straps to lugs preparatory to fusing.

8335-274 BATTERY-LEAD BURNER(mach., weld. & forg.) DPT:664
GED: 2 SVP: 3 EC: I 6 7 PA: L 4 7

Fuses together lead and lead-alloy connections and builds up storage-battery parts, using oxy-acetylene torch and lead filler bar:
Opens acetylene valve, lights torch and adjusts flame by regulating oxygen and acetylene valves to obtain proper fuel mix for flame of specified temperature. Manipulates torch over joining points of parts,

adding metal as required by melting end of lead bar. Seals fusion points of parts, such as straps, posts or strips connecting battery plates. Guides torch and metal bar to add metal and build up parts, such as battery posts to specified size, using moulds. Installs and removes moulds or burning-dams used to position molten lead. May be designated according to specific task performed; for example, Battery-Connector Burner
Battery-Post Builder

8335-278 BATTERY-LEAD-BURNER HELPER(mach., weld. & forg.) DPT:687
GED: 2 SVP: 2 EC: I 6 7 PA: M 4 7

Helps in lead-burning by preparing storage battery parts for fusing (lead burning), performing any combination of the following duties: Positions specified number of positive and negative plates in burning-rack in preparation for fusing to connecting straps. Places intercell connectors on assembled batteries. Places moulds over posts preparatory to adding lead to build up posts to specified shape and height. Removes moulds from posts after burning, using tongs, and places positive and negative moulds in separate containers. Selects burning racks according to size of plates grouped. Stamps polarity symbols on posts, using hand-marking dies. Hauls plates from storage to burning area, using handtruck. Fills grooves in one-piece-battery covers with epoxy resin, using machine. Places covers on batteries. See also definition for term title, 02-160 HELPER (any ind.).

Arc and Flame Cutting Occupations
8335-298 through 8335-314

8335-298 FLAME-CUTTING-MACHINE OPERATOR(mach., weld. & forg.) DPT:682
burning-machine operator; gas-cutting-machine operator.
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Operates flame-cutting machine to cut metal plates and structural shapes to dimensions, contour and bevel:

Lifts, positions and clamps metal stock onto bed of machine. Connects hoses from torch to tanks of oxygen and fuel gas, such as acetylene, hydrogen or propane. Selects torch tip, gas and oxygen pressures and speed of cut, according to type and thickness of metal, from experience, data charts or record of previous cuts. Installs tip in torch and turns crank to slide cutting heads from overhead carriage or adjusts sliding arm from side carriage to position torch over cutting line. Adjusts height of head over workpiece to make longitudinal cuts. Regulates length of radial arm to cut out arcs or circles. Tilts torch to angle to cut bevels. Turns knobs and reads gauges to obtain selected oxygen and gas pressures and mixture, and to set speed of cutting action. Lights torch, preheats edge of metal to oxidizing temperature, starts machine and opens valve to release additional oxygen to burn path through metal along cutting line. Observes process and makes minor adjustments to improve cutting action. Manually guides torch suspended from free-moving arm, or crawler-type torch, along cutting line to cut irregular shapes. Clamps two or more plates together for simultaneous cutting.

May operate machine equipped with two or more cutting heads. May lay out cutting lines, using rule, tape and square. May set up portable track or radial arms to cut large pieces in position.

8335-302 FLAME-CUTTING TRACER-MACHINE OPERATOR (mach., weld. & forg.) DPT:682
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Operates machine which follows outline or track of template and transfers action through levers to torch which cuts metal plates and structural shapes:

Prepares workpiece and equipment for flame-cutting operations
8335- 298 FLAME-CUTTING-MACHINE OPERATOR (mach., weld. & forg.). Positions, aligns and secures template onto adjacent table. Positions tracer wheel stylus or magnetized roller onto edge of template and guide wheel onto track, or beam of photoelectric cell over edge of drawing on photographic plate. Lights torch, preheats edge of metal to oxidizing temperature and opens valve to release additional oxygen to burn path through metal. Starts machine which moves tracer along track edge of template or over drawing and transfers movement to bug-type (crawler) cutting head through series

of levers. Observes process and makes minor adjustments to improve cutting action.

May manually guide stylus or tracer wheel along edge of template or sketch drawn on table. May set up portable track or radial arms to cut plates in position. May be designated according to equipment used; for example,

Electric-Eye Flame-Cutting-Machine Operator
Magnetic-Flame-Cutting-Machine Operator
Pantograph-Flame Cutter
Track-Template Flame-Cutting-Machine Operator

8335-306 ARC CUTTER(mach., weld. & forg.) DPT:684
GED: 3 SVP: 4 EC: I 5 6 7 PA: H 3 4 7

Cuts, trims, or scarfs metal objects to dimensions, contour, or bevel, using arc-cutting equipment:

Positions workpiece onto table or into fixture, manually or with hoist. Selects carbon or metal-coated-carbon electrode, air nozzle, electric-current rating and air pressure, according to thickness of metal, data on charts or from records of previous cuts. Inserts electrode and air nozzle into holder and connects hose from holder to compressed air supply. Connects cables from power source to electrode and workpiece or fixture to obtain desired polarity. Sets amperage by turning knob. Turns lever to adjust jet of air to blow away molten metal. Strikes arc and guides electrode along lines to cut (melt) through metal. Cuts off chips or sprues and burns out cracks and holes.

May cut without use of air jet. May use non-consumable tungsten electrode and inert or fuel gas depending on type of metal being cut. May lay out specified shape on metal, using straightedge, scale and compass or trace layout from template or pattern.

8335-310 FLAME CUTTER, HAND(mach., weld. & forg.) DPT:684
burner; cutter, gas; cutter, torch.
GED: 3 SVP: 4 EC: B 5 6 7 PA: M 3 4 7

Cuts, trims, or scarfs metal objects to dimensions, contour, or bevel, using flame-cutting torch:

Lays out cutting lines or traces from template, using rule, square, compass, chalk, scribe, center punch and hammer. Moves workpiece to work site and positions it manually or by using crane or hoist. Connects hoses from hand torch to oxygen and fuel-gas cylinders, and adjusts valves to regulate pressures. Selects cutting tip to cut metal of different types and thicknesses. Opens torch valves, lights torch and adjusts flow of oxygen to obtain desired mixture as indicated by colour and size of flame. Directs flame onto workpiece to heat it to oxidizing temperature as indicated by colour of metal. Squeezes lever or trigger to release additional jet of oxygen, which burns path through metal. Guides flame across workpiece following cutting line, allowing for width of cut and observing cutting to judge angle, distance of torch, and speed of movement. Removes and inspects finished workpiece. Chips or grinds burrs from edges, using power chisel or portable grinder. Cuts damaged or worn pieces from metal structures, such as bridge or building frames, ship plates or pipelines.

May install special tip to cut grooves into metal joints to prepare workpieces for welding. May flame cut aluminum, using oxy-acetylene torch equipped with steel dust and compressed air equipment.

8335-314 FLAME CUTTER, SCRAP(mach., weld. & forg.) DPT:684
burner, scrap.
GED: 2 SVP: 3 EC: B 6 PA: M 3 4 7

Dismantles metal assemblies, such as automobiles, machines, building girders and ships and cuts scrap metal to size, using flame-cutting torch:

Connects hoses from hand torch to oxygen and fuel gas cylinders, and adjusts valves to regulate pressures. Selects cutting tip to cut metal of different types and thicknesses. Opens torch valves, lights torch and adjusts flow of oxygen to obtain desired mixture as indicated by colour and size of flame. Directs flame on workpiece to heat it to oxidizing temperature, as indicated by colour of metal. Squeezes lever or trigger to release jet of oxygen, which burns path through metal.

May climb ladders or work on scaffolds to disassemble structures. May signal and guide craneman in the disposal of scrap metal after it has been cut.

Miscellaneous Welding and Flame Cutting Occupations
8335-334 through 8335-399

8335-334 WELDING TECHNICIAN(mach., weld. & forg.) DPT:281
GED: 4 SVP: 7 EC: I 5 6 7 PA: L 4 5 7

Develops welding and brazing machine set-up data to ensure that welded parts conform to engineering specifications, applying knowledge of machine functions, electronics, properties of metal, effects of heat and shop mathematics:
Analyzes orders and diagrams for data such as specified strength of joint, dimensions and tolerances. Selects and modifies fixtures for custom jobs. Decides welding process to be used for particular job, such as electric arc, metal-inert-gas, resistance, gas or braze welding. Repairs or modifies welding equipment, using drill press, lathe, lapping and grinding wheels. Sets up machines for trial runs. Welds, tests and inspects samples to verify machine setup. Readjusts machine to obtain specified dimensions, type and strength of weld. Records data and prepares set-up charts and diagrams. Inspects and tests new machines to detect imperfections and develop set-up techniques. Recommends repairs or changes to improve function of welding machine. See also definition for term title, 02-410 TECHNICIAN (prof. & tech., n.e.c.).

8335-338 METAL STRAIGHTENER AND HEATER(mach., weld. & forg.) DPT:684
straightener and heater, torch.
GED: 3 SVP: 4 EC: I 3 5 6 PA: H 3 4 7

Straightens metal plates, weldments and structural shapes or preheats them preparatory to welding or bending, using gas welding equipment:
Selects torch tip according to thickness, area and temperature of metal to be heated. Screws tip on torch and connects hoses from torch to oxygen and fuel-gas tanks. Opens valves on tanks, regulates hose pressure, lights torch and adjusts mixture to obtain desired size and colour of flame. Holds or guides flame along surface of workpiece to heat and expand metal to achieve specified straightness, or until colour indicates sufficient heating for welding or machine straightening or bending. Measures workpiece with straightedge or template to insure conformance to specifications. Hammers out bulges and bends. May roll workpiece on flat surface or mount and rotate it between centers to observe irregularities. May use jack or press to straighten workpiece. May place workpiece into furnace or forge to heat metal for straightening.

8335-342 WELDER HELPER(mach., weld. & forg.) DPT:687
GED: 2 SVP: 3 EC: I 5 6 7 PA: H 3 4 5 6

Helps in welding, brazing, and flame and arc cutting processes by performing any combination of the following duties:
Helps set up welding machines and equipment by securing specified tip in torch, or inserting specified welding rods in holders, or placing reels of wire onto racks and threading wire through feed rolls. Fills machine hoppers with powdered or liquid flux. Connects hoses to gas supply tanks or cables to electrical power supply. Conveys workpieces, tools, jigs and supplies to work site, manually or with hand truck or crane. Prepares workpiece for welding by cleaning with wire brush, solvents or portable grinder. Clamps workpiece into holding fixture or places in trays or on conveyor in specified order. Brushes flux along seams of workpiece. Preheats workpiece by placing into furnace for specified time. Removes finished workpieces, using tongs or hoist. Tags or marks finished weldments with identifying information. Cleans welding equipment, picks up scrap and sweeps work area. See also definition for term title, 02-160 HELPER (any ind.).
May be designated according to type of process or machine operator helped; for example,
Flame-Cutter Helper
Welding-Machine-Operator Helper, Arc
Welding-Machine-Operator Helper, Gas

8335-346 MACHINE FEEDER(mach., weld. & forg.) DPT:686
GED: 2 SVP: 2 EC: I 6 PA: M 4

Feeds metal components and removes finished assemblies from brazing, soldering or welding machines or furnaces:
Places or clamps metal workpieces into holding fixtures, onto heating fixtures, trays or conveyor, in specified order. Removes finished assemblies after they have passed through heated induction coil,

furnace, between electrodes or over gas flame and through cooling chamber or water. Places supplies, such as wire and powdered or liquid flux into machines. Loads components into hoppers to feed machines which automatically position them into fixtures. Stacks completed workpieces on pallets or places them on conveyor. May examine finished work and separate defective pieces. May be designated according to machine fed; for example,
Brazing-Furnace Feeder
Brazing-Machine Feeder
Soldering-Machine Feeder
Spot-Weider Feeder

8335-399 OTHER WELDING AND FLAME-CUTTING OCCUPATIONS

This group includes welders and flame-cutters, not elsewhere classified; for example, those concerned with making wire mesh sieves and guards, used for swimming pools, in motors of jet aircraft, motor boats and automobiles; and operating continuous-butt-welding machine to automatically weld pipe seams.

8336-INSPECTING AND TESTING OCCUPATIONS, METAL SHAPING AND FORMING, EXCEPT MACHINING

This unit group includes occupations in inspecting and testing work, as described under the term titles, 02-170 INSPECTOR (any ind.) and 02-430 TESTER (any ind.), concerned with quality control activities in metal shaping, forming and welding, except machining.

8336-110 WELD INSPECTOR(mach., weld. & forg.) DPT:281
weldability-test inspector.
GED: 4 SVP: 7 EC: B 5 6 7 PA: H 3 4 7

Inspects and tests welded joints of work in progress or of completed units, for visible defects, correct dimensions, joint strength, bead and weld penetration:
Measures dimensions of workpiece for conformance with layout, drawings and specifications. Examines joints visually to detect flaws, such as hair-line cracks, cold-weld spatter and undercuts, using flashlight and magnifying glass. Inspects joints for defects, using non-destructive testing methods, such as magnetic-testing machine, fluorescent penetrants, X-ray or ultrasonic equipment. Tests strength of joint, using stress-testing equipment. Inspects internal structure of welded joint, using X-ray machine to locate defects, and analyzes X-ray photographs to identify defects. Verifies welding machine setup and alignment and dimensions of product, visually and using precision measuring instruments. Marks defective workpieces and recommends scrapping or re-working. Performs welding trials and observes action for spatter and bubbles to detect impurities in metal. Records inspection data and submits technical reports.
May instruct employees in welding, to prepare them for certification tests.

8336-114 INSPECTOR, METAL FABRICATING(any ind.) DPT:381
GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Inspects and tests materials, finished metal products, and work in process of fabrication into metal products, to ensure conformance with work orders, drawings and specifications:
Measures center lines and reference points to verify initial assembly, layout and machine setup, using lay-out plate, templates, squares, straightedge, feeler gauges and tape. Verifies size and other physical properties of materials, such as plates, sheets, structural shapes, castings, forgings, dies, fixtures and work produced by metalworking machines, using magnetic-flux machine, surface plate, hardness testing equipment, gauges and micrometers. Examines finished products for rough edges, cracks and appearance. Marks parts for acceptance or rejection. Recommends changes in dies, fixtures and materials used to improve product or simplify operations.

8336-118 INSPECTOR, FORGINGS(mach., weld. & forg.)

DPT:261

GED: 4 SVP: 6 EC: I 5 PA: H 3 4 5 6 7

Inspects forgings for conformance to manufacturers' standards:
Reads job order and drawings to determine forging specifications.
Verifies dimensions of forgings, using measuring devices such as calipers, gauges and rules. Examines forgings to detect surface defects, such as scale, laps and cracks. Informs supervisor of defects and their probable cause. Stops production and orders variations in forging methods, such as change in heating temperature, modification of ram stroke or realignment of dies to correct defects. Re-examines forging to determine if all specified operations, such as heat treating, cleaning and machining have been performed.
May inspect raw stock. May inspect hot or cold forgings before completion and be designated accordingly,
Inspector, Hot Forgings

8336-122 INSPECTOR, LEAF SPRINGS(mach., weld. & forg.)

DPT:381

GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Inspects and tests leaf springs for conformance to specifications:
Verifies length, taper, curvature, trimming and punching of spring leaves, using scale, gauges and template. Tests spring leaf in load-tester to determine if springs meet load requirements. Verifies intensity of shot-peening treatment by feeding fixture containing test strip into shot-peening machine and measuring curvature produced in strip, using gauge. Records test results for quality control purposes. Observes spring assembly operations to ensure that parts are assembled according to specifications. Recommends changes in machine setup or assembly operations to improve product or simplify operations.
May adjust spring-forming machine, if inspection and testing indicate faulty production, by changing or aligning dies, using hand tools.

8336-126 INSPECTOR, METAL-PARTS(any ind.)

DPT:684

GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Inspects unfinished metal parts of products, such as refrigerators, dryer cabinets, baby carriages and furniture, for defects in metal surfaces or poor workmanship:
Visually examines and feels surface of metal parts to detect defects. Marks rejected piece with chalk or crayon and returns it to proper department for repairs. Checks welds and bent corners for burrs. Removes burrs with file and abrasive cloth. Records parts rejected and reason for rejection.
May visually inspect surfaces of painted articles to detect rough or discoloured areas.

8336-130 INSPECTOR, TIN CAN(metal stamp., press. & coat.)

DPT:384

GED: 2 SVP: 4 EC: I 5 6 PA: L 4 7

Inspects and tests tin cans and tin can components to ensure that standards are maintained:
Pulls samples of tinplate, can ends, can bodies or assembled cans from production line, and visually examines them for flaws such as scratches and dents, or deficiencies in sealing compound or lacquer. Cuts parts from tinplate sheets or assembled cans, using handpress, cutter or can opener. Measures structural features such as overlap of body flange and contour of seam with dial gauges, charts and magnifying projector. Measures bursting strength of cans and tests for leaks, using mechanical, air pressure or water testing devices. Examines coatings on tinplate and tin cans for thickness and evenness of application by chemical, dye or electrical tests or by precision weighing. Checks performance of critical parts of production equipment, using solder analyzer, pyrometer and thermometers. Compiles test records and compares results with standard specifications.
May sort defective cans and tinplate sheets according to specification chart for shipment, scrap or recovery. May supervise employees performing water and air testing, inspecting and sorting of tin cans.

8336-134 INSPECTOR, WIRE PRODUCTS(wire prod.)

DPT:684

GED: 2 SVP: 4 EC: I PA: M 3 4 7

Inspects wire products such as barbecue frames, oven or refrigerator racks, wire cloth and chain-link fabrics for conformance to specifications:
Places product in fixture or rolls out fabric to check dimensions and verify specified size and shape. Examines product for defects such as broken welds, chipped or unpainted surfaces, holes, or uneven weave. Twists and bends product into alignment, using hands or pliers. Cuts out defective sections of wire cloth or fabric, using scissors or wire cutters. Staples ends of cloth together, using stapling gun. Routes defective products to repair shop.
May record fabrication data after finishing process. May be designated according to type of wire product inspected.

8336-138 SPRING TESTER(mach., weld. & forg.; metal fab., n.e.c.)

DPT:684

load tester, springs.

GED: 2 SVP: 4 EC: I PA: M 4 7

Tests coiled or leaf springs for conformance with specified load, dimension and hardness requirements:
Verifies dimensions and shape of finished springs, using gauges or template and measuring instruments such as micrometers and calipers. Positions springs in holding fixture of press table. Presses button to lower ram or pulls lever to compress spring to specified load-test limits. Measures contraction of spring, using gauges. Releases press and measures uncompressed spring. Rejects springs which do not return to specified measurements. Tests hardness of spring material, using tester which makes indentations in spring surface for measurement and comparison. Observes temperature gauges of furnaces, quenching-oil baths and draw-ovens to ensure specified heat treatment of springs. Records temperature readings and test results for quality control purposes.
May insert wedges between spring coils and tap with mallet to adjust light springs to specified length and pitch. May test intensity of shot-peening treatment of leaf springs by placing test strip in fixture and measuring curvature of strip after shot peening.

8336-142 CHAIN-TESTING-MACHINE TENDER(mach., weld. & forg.)

DPT:685

GED: 2 SVP: 2 EC: I PA: M 4 7

Tends machine that tests strength of chains:
Adjusts chain-holding jaws on machine, to accommodate size of chain, using hand tools. Sets scale dial to specified pounds, to regulate pulling power of machine. Positions chain in jaws and starts machine. Examines and gauges chain to detect broken or stretched links. Rolls chain on coil and ties it in bundle, using wire.
May dip bundle in anti-rust tank, using electric hoist.

8337-BOILERMAKERS, PLATERS AND STRUCTURAL-METAL WORKERS

This unit group includes occupations concerned with fabricating, assembling, erecting and repairing boilers; and fabricating structural parts and sub-assemblies for storage tanks, ships and other structures made from steel plates, tubes, beams, or similar materials. Activities include: laying out and marking metal and setting up and operating heavy-duty metalworking machines to cut, bend, roll, fit, drill, punch, ream, bolt, weld and rivet metal stock. Occupations concerned with erecting and repairing structural-metal parts and sub-assemblies are classified in their appropriate unit group in Major Group 85, PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS and Major Group 87, CONSTRUCTION TRADES OCCUPATIONS.

8337-110 BOILERMAKER(struct., plate & ornam. metal) DPT:360
GED: 4 SVP: 7 EC: I 5 PA: H 3 4 7

Lays out, fabricates, assembles and welds boilers, tanks, pressure vessels and parts in boiler shop:
Develops layout and plans sequence of operations, applying knowledge of trigonometry, allowances for thickness of metal, machine and welding shrinkage, and physical properties of metal. Locates and marks bending and cutting lines on workpiece, using T-squares, protractors, compasses and drawing instruments or templates. Sets up and operates metalworking machines such as brakes, rolls, shears and drill presses. Cuts metal plate and brackets, using flame-cutting torch. Hammers, chips and grinds workpiece to shape or fit parts. Preheats workpieces, using hand torch or furnace. Positions, aligns, fits and welds parts together. Installs and expands boiler tubes, using tube expander. Designs and constructs templates and fixtures. Directs helper in performing his duties.
May fabricate and assemble sheet metal products such as domestic boilers and smoke and ventilation stacks.

8337-114 STRUCTURAL-METAL FABRICATOR(struct., plate & ornam. metal) DPT:360
GED: 4 SVP: 7 EC: I 5 PA: H 2 3 4 5 6 7

Fabricates, assembles, and repairs structural-metal products, such as framework or shells for machinery, tanks, stacks, and metal parts such as beams, stairs and railings for buildings and bridges according to job specifications or drawings:
Develops layout and plans sequence of operations, applying knowledge of trigonometry, allowances for thickness of metal, machine and welding shrinkage and physical properties of metal. Locates and marks bending and cutting lines on workpiece. Sets up and operates various metalworking machines, such as brakes, rolls, shears, flamecutters and drill presses. Cuts, bends, and straightens metal by hammering, sawing, chipping and grinding. Preheats workpieces, using hand torch or furnace. Positions, aligns, fits and welds parts together. Designs and constructs templates and fixtures. Directs activities of hoist or crane operators, other workers and helpers during fabrication, assembly, or repair of metal structures in shop.
May fabricate and assemble sheet metal products. May set up and operate machine tools such as radial drill press, end mill or edge planer.

8337-118 BOILERMAKER, ERECTION AND REPAIR(struct., plate & ornam. metal) DPT:361
GED: 4 SVP: 7 EC: B 5 6 7 PA: VH 2 3 4 7

Assembles, erects and repairs boilers, and associated tanks and vats on site, following drawings and using hand and power tools:
Determines location and relationship of parts from drawings and other specifications. Locates and marks position of parts, using tape, transit, square and plumb bob. Drills and taps holes with portable drill to install studs. Sets up rigging or signals crane operator to lift and position parts and assemblies. Aligns structures, sections or parts to assemble boiler frame, tanks or vats, using plumb-bobs, levels, wedges, turnbuckles, jacks, hammers and drift pins. Hammers, flame-cuts, files or grinds irregular sections or structures to fit edges together. Straightens or reshapes bent plates or structural members, using hammer, jacks and welding torch. Clamps, bolts or tack-welds parts in place for final welding or bolting. Tightens bolts with hand or power wrenches to assemble frames, mount casings of water-tube boilers or to assemble davit heads, burners or furnace casings to fire-tube boilers. Positions drums and headers into supports and bolts and welds to frame. Connects boiler tubes by expanding ends with tube expander, belling ends with power hammer or welding tube ends to heads to ensure leakproof joints. Bolts or welds casing sections, stacks, baffles and other fabricated parts such as chutes, air heaters, fan stands, feeding tubes, ladders, coal hoppers and safety hatch to frame. Installs manholes, valves, gauges, and feed water connections to complete assembly of water tube boilers. Assists in testing assembled vessels by pumping water or gas under specified pressure into vessel, and observes instruments to detect possible leaks. Repairs boilers or tanks on site by unbolting or flame-cutting defective sections or tubes, installing new tubes, fitting and welding new sections and replacing worn lugs on bolts. Lines firebox with refractory brick and compound. Gives direction to helpers during assembly, erection and repair of boilers.
May fabricate parts such as stacks, uptakes and chutes to adapt boiler to premises in which it is installed. May thread and install stay-tubes,

using pipe wrench and dies. May rivet and caulk sections of vessels or or shells, using pneumatic rivetting and caulking hammers. May specialize in boiler maintenance and be designated accordingly, Boilermaker, Maintenance

8337-122 FITTER, STRUCTURAL METAL(struct., plate & ornam. metal) DPT:361
fitter-assembler, structural metal.
GED: 4 SVP: 7 EC: I 5 6 PA: H 2 3 4 5 7

Lays out, aligns, fits and assembles fabricated parts and frameworks of structural metal, in shop, as specified by drawings and lay-out specifications:
Examines drawings and materials list to obtain parts specifications. Plans sequence of operations, applying knowledge of geometry, effects of heat and allowances for weld shrinkage, machining and thickness of metal. Locates and marks centerlines and reference points on floor, plate or face block and transposes them to workpiece, using square, tape, scale, chalk line, plumb-bob, soapstone, scribe and transit. Tack-welds scrap metal to form jig for assembly. Positions parts in jig, manually or with hoist or crane, and files, chips, and grinds parts and reams holes to fit them together. Aligns heavy parts and sub-assemblies, using jacks, turnbuckles, wedges, drift pins, pry bars and hammers. Removes high spots and surplus metal, using hand files, portable grinder and cutting torch. Heats parts with oxy-acetylene torch and shapes them, using vise, anvil, or stakes mounted on table. Straightens warped or bent parts, using sledge and torch or straightening press. Positions and tightens braces, jacks, clamps or ropes to fit workpieces together for bolting, riveting or welding. Compares dimensions of parts and assemblies to specifications, using square, tape and scale. Erects ladders and scaffolding to fit together large assemblies. Gives directions to helpers.
May tack-weld parts in position in preparation for final welding. May join parts by braze welding (bonding), using oxy-acetylene torch and brazing rod. May anneal parts to remove stresses after welding by heating and allowing parts to cool slowly.

8337-126 LAY-OUT MAN, STRUCTURAL METAL(struct., plate & ornam. metal) DPT:381
GED: 4 SVP: 7 EC: I 5 PA: M 3 4 7

Lays out reference points and dimensions on structural shapes, plates and tubes for fabricating, welding and assembling into structural metal products, such as cranes, bridges, buildings, boilers, smoke stacks, and conveyors:
Plans and develops layout as outlined in drawings and templates, applying knowledge of trigonometry, product design, effects of heat and allowances for curvature and thickness of metal. Determines from templates and drawings location of holes, cuts and bends. Details location and sequence of cutting, drilling, bending, rolling, punching and welding operations, using instruments, such as compass, protractor, dividers and rule. Marks curves, lines, holes, dimensions and welding symbols onto workpiece, using scribes, soapstone and center punches.
May design and make templates of wood, paper or metal. May fit and align fabricated parts for welding or assembly operations.

8337-130 METAL FORMER, HAND(struct., plate & ornam. metal) DPT:361
GED: 4 SVP: 6 EC: I 5 PA: H 4 7

Bends or straightens hot or cold metal plates, bars, pipes and tubes, structural shapes and weldments to form angles, curves or flanges as specified by drawings, layouts and templates:
Lays out reference points on workpiece, form blocks or bending table, using tape, compass and radius bar and applying knowledge of shop mathematics, effects of heat and physical properties of metal. Sets up and bolts or clamps fixtures, dies and forming bars to form-block or bending table to outline specified contour. Heats metal, using furnace or hand torch. Lifts, positions, aligns and clamps or bolts workpiece to form-block, fixture or bending table, manually or with hoist. Bends workpiece, using bar, power bender or tugger or by hammering with sledge or mallet. Straightens out warps or bumps by heating with hand torch and using hammer. Chips and grinds edges to specified contour, using chipping hammer and portable grinder. Operates hand-powered machines such as roll brake or bender.

8337-134 HEAVY-DUTY PRESS-SET-UP OPERATOR(struct., plate & ornam. metal) DPT:380
hydraulic-press operator.
GED: 4 SVP: 6 EC: 1 5 6 PA: H 3 4 7

Sets up and operates vertical or horizontal heavy-duty power press to bend or form radial shapes and straighten heavy metal bars, plates, structural members, forgings and weldments as specified by drawings, layout and templates:

Plans sequence of operations, applying knowledge of physical properties of metal. Sights along, measures and marks workpiece, using tape, rule, straightedge, template and square. Selects and positions flat, V-block radius or special purpose die sets into , ram and bed of machine, using crane or hoist. Aligns and bolts dies to ram and bed of machine, using gauges, templates, feelers, shims and wrenches. Turns handwheel or levers to set depth and pressure of ram stroke. Preheats workpiece in furnace or with hand torch. Lifts and positions workpiece between dies of machine, using crane and sledge. Starts machine to move ram that bends or straightens workpiece between dies. Repositions workpiece and changes dies when making multiple or successive passes. Positions roller table to support workpiece for horizontal pressing and repositions roller tables after each pass to bend or form radial shapes. Hand forms or finishes workpiece, using sledge and anvil. Inspects finished workpiece for conformance to drawings or layout and marks identifying information on workpiece. May set up and operate heavy-duty press equipped with concave and convex die sets to form heavy plate disks into concave shapes. May operate press equipped with two or more rams to bend angles or flanges, or bend to radius by successive passes. May draw full-scale pattern of workpiece on lay-out table or floor, using tape, square and dividers according to drawings, and verify dimensions of workpiece against pattern.

8337-138 METAL-FORMING MACHINE-SET-UP OPERATOR (struct., plate & ornam. metal) DPT:380
GED: 4 SVP: 6 EC: 1 5 PA: H 4 7

Sets up and operates metalworking machines, such as brakes, rolls, shears, saws, and heavy-duty presses to cut, bend, straighten and form metal plates, sheets and structural shapes as specified in drawings, layout and templates:

Selects, positions and clamps dies, blades, cutters and fixtures into machine, using rule, square, shims, template, built-in gauges and hand tools. Positions and clamps stops, guides and turntables. Turns handwheels to set pressure and depth of ram stroke, adjustment of rolls, and speed of machine. Locates and marks bending or cutting lines and reference points onto workpiece, using rule, straightedge or by tracing from templates. Positions workpiece manually or with hoist against stops and guides or aligns lay-out marks with dies or cutting blades. Pushes button to start machine. Repositions workpiece and changes adjustments or dies for multiple or successive passes. Measures completed work, using rule, gauges and templates to conform to specifications. Preheats heavy metal workpieces, using hand torch or furnace.

May operate other machines, such as bar straighteners, drill presses, flame cutters, spot welders and metallizing equipment.

8337-142 ORNAMENTAL-METAL WORKER(struct., plate & ornam. metal) DPT:380
GED: 4 SVP: 6 EC: 1 5 PA: H 4 7

Makes architectural metal parts of ornamental and functional design; such as, grills, railings, gates and fences containing scrolls, decorative twists and interlaced metal:

Develops lay-out and plans sequence of operations, applying knowledge of shop mathematics, allowances for metal thickness, machine and welding shrinkage and physical properties of metal. Designs and constructs templates and fixtures. Locates and marks bending and cutting lines onto workpiece. Sets up and operates metalworking machines, such as brakes, rolls, shears, flamecutters, drill presses, and scroll and twisting machines. Manually bends metal around jigs or scroll irons, or twists metal, using twisting fork. Feeds metal stock between opposing cog wheels that rotate to form ripples, crimping or ribbon mesh from stock. Interlaces rippled or twisted metal stock to form ornamental grillwork. Cuts, shapes and fits workpieces by hammering, chipping and grinding. Preheats heavy workpieces, using hand torch, forge or furnace. Positions, aligns, fits and welds together parts. Fabricates miscellaneous products such as

fire escapes, access ladders, flag poles, gratings, guard railing, gates and brackets.
May install finished products.

8337-146 SLIP-ROLL OPERATOR, HEAVY DUTY(metal stamp., press. & coat.) DPT:382
bending-roll operator.
GED: 4 SVP: 5 EC: 1 5 6 PA: H 3 4 7

Operates slip-rolling machine to bend metal plates, sheets or bars into arcs, cylinders, cones or curved structural shapes according to drawings, and templates:

Lifts upper roll by pulling lever, and positions workpiece into machine manually or with crane. Lowers roll and turns nuts or handwheel to lock roll into machine, and to adjust pinch-roll to thickness of metal. Turns handwheel to adjust roll to set degree of curvature of initial pass. Starts machine and sets feed speed of workpiece. Controls back and forth direction of workpiece by moving lever. Adjusts roll after each pass to progressively form workpiece into specified shape. Re-aligns workpiece between rolls, using hammer. Measures arcs with template and rule. Sets adjustment roll at angle to form conical shapes. Adjusts roll to straighten warped or bent bars or plates. May preheat metal, using hand torch or furnace. May operate vertical-roll machine and be designated accordingly, Vertical-Roll Operator

8337-150 STEEL-PLATE SHAPER(ship & boat bldg.) DPT:664
tampo heater.
GED: 3 SVP: 6 EC: B 5 6 7 PA: H 2 3 4 7

Shapes hull and deck plates of ship to specified contour, using oxy-acetylene torch:

Signals crane operator to lower rolled plate onto support blocks. Prepares heating torch by connecting fuel lines and adjusting fuel supply controls to obtain desired mixture. Applies heat to selected areas of plate for specified time in accordance with heat-treating process and knowledge of metallurgy, using weight placed on plate to facilitate shaping, and template to provide guidelines for specified contour. Inspects plate after cooling and repeats heating process until desired contour is obtained.

May apply heat to plates to remove distortions caused by welding.

8337-154 ANGLE-SHEAR OPERATOR(struct., plate & ornam. metal) DPT:382
GED: 3 SVP: 5 EC: 1 5 PA: H 4 7

Operates shearing machine equipped with sets of cutting dies or blades to shear structural shapes, such as angles, channels and Z- bars to specified angle, length or bevel: Selects, aligns and fastens cutting blades or dies in machine, using rule, gauge, shims, feelers and wrench. Turns handwheels to adjust angle and pressure of blade. Positions and clamps stops and side guides to set length and angle of cut, using rule, built-in gauges or template. Lifts workpiece manually or with hoist or crane to machine bed or roller table and positions it against side guide and end stops. Starts machine that clamps workpiece and activates cams that force blades to shear metal. Lays out cutting lines on metal, using rule, square, or template when shearing custom pieces.

May set up shear with single set of blades to cut bars or rounds. May inspect work, using tape, compass, gauge or template to verify dimensions.

8337-158 BOILERMAKER HELPER (struct., plate & ornam. metal) DPT:685
GED: 2 SVP: 4 EC: 1 5 PA: H 2 3 4

Helps workers to fabricate and assemble boilers and steel-plate vessels, such as tanks and vats in boiler shop, performing any combination of the following duties:

Tends machines, such as drill press, punch press and boring mill to drill, punch and ream metal stock for boiler parts. Tends power shears to cut plate to size and shape. Grinds welded joints, and other irregular areas to smooth boiler surfaces, using portable and pedestal grinders. Fills steel-boiler tubes with sand prior to bending. Wraps blanket of insulation around shell to insulate boiler and tacks blanket

to shell surface, using stud-welding gun. Helps move and position materials, manually or with overhead bridge-crane or dolly. Removes casing, grates and grate rigging from boiler prior to repair of boiler and reassembles them after repair, using hand tools. See also definition for term title, 02-160 HELPER (any ind.).

8337-162 METAL-FORMING-MACHINE TENDER(struct., plate & ornam. metal) DPT:685
GED: 2 SVP: 4 EC: I 5 PA: H 3 4 7

Tends metal-forming machines, such as saws, shears, brakes, straightening press and punch, to cut, shape and bend metal plates, sheets and structural shapes:

Sets stops or guides to specified length, using scale, rule or template. Positions workpiece, manually or with hoist, against stops and guides or aligns lay-out marks with dies or cutting blades. Starts machine by pushing button or depressing treadle. Measures completed work, using rule or template. Finishes workpieces by removing burrs, sharp edges, rust or scale, using file, portable grinder, or wire brush. Performs other duties in shop, such as oiling machines, dies or workpieces, assisting machine operators to set up machines, and stacking, marking, packing and transporting finished pieces on handtruck.

May tend other machines, such as drill press, spot welder, or riveting machine.

8337-166 METAL-FORMER HELPER, HAND(struct., plate & ornam. metal) DPT:684
GED: 2 SVP: 3 EC: I 5 PA: H 3 4 7

Helps metal workers to bend and straighten hot or cold metal plates, bars, pipes, tubes, structural shapes and weldments, performing any combination of the following duties:

Transports tools, fixtures, materials and workpieces manually or by hand truck. Places metal in furnace or heats it with hand torch. Helps bolt or clamp fixtures, dies and shims onto forming block, using hand wrench. Assists in lifting workpiece manually or with hoist, and in clamping workpiece onto forming block, fixture or bending table. Helps bend workpiece to specified shape, using pry bar, hammer, sledge or mallet. Measures work, using template, rule or straightedge. Marks or tags identifying information onto finished work. Chips or grinds rough or sharp edges from workpiece, using portable grinder or pneumatic chisel. Stacks finished work on trolley or handtruck. See also definition for term title, 02-160 HELPER (any ind.).

8337-170 BOILERMAKER HELPER, ERECTION AND REPAIR(struct., plate & ornam. metal) DPT:687
GED: 2 SVP: 2 EC: I 5 6 7 PA: H 2 3 4

Assists workers to assemble, erect and repair boilers, tanks or vats on site:

Carries or hauls tools, equipment, materials and parts to work area. Attaches slings, ropes or cables to objects, such as plates, tubes, and drums for moving by crane. Lifts, holds, and moves parts and materials to assist other workers in fitting, straightening or fastening them into position. Bolts or unfastens assemblies, using hand tools, such as wrenches, screwdrivers or prying bars. Cleans and scrapes boilers and vessels preparatory to painting or shipping, using scraping tool and steel abrasive or pneumatic-scaling tool. Carries or hauls dirt and discarded parts from work area. See also definition for term title, 02-160 HELPER (any ind.).

May mix insulating material used for insulating boiler heads or fire pots, using shovel and hoe. May remove burrs and smooth welded seams, using file and portable grinder.

8339-METAL SHAPING AND FORMING OCCUPATIONS, EXCEPT MACHINING, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with shaping, forming and joining a wide variety of metal parts and products; such as, ornamental and art metal workings, lighting fixtures, wire screening and fencing, wire springs, frames and baskets; slide fasteners, safety pins, and reinforcing cages, using any combination of forging, pressing, winding, rolling, punching, shearing, welding, brazing and soldering techniques.

8339-110 ART-METAL WORKER(metal fab., n.e.c.) DPT:260
GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Sets up and operates variety of metalworking machines and equipment to fabricate light fixtures, lamps, church statuary, plaques and other metal artwork, following sketches, artistic and architectural drawings, models, written descriptions and photographs:

Interprets data to select materials, lay out reference points and develop sequence of operations. Sets up and operates machines, such as shears, saws, brakes, bending machines, drills and presses to cut stock to size or bend it to shape. Heats pieces in forge to working temperature, as indicated by colour. Bends, twists and hammers hot or cold workpieces to achieve desired shape and ornamental imprints, using jigs, scroll iron, twisting fork, vise and special peening hammers. Operates machine tools to turn, drill and mill metal workpieces to specified dimensions. Engraves castings to finish metal statuary and plaques, using hand scrapers and tools. Welds, brazes, solders, rivets or bolts components together to assemble workpiece. Grinds, buffs and polishes surfaces to desired finish. Fabricates or forges special jigs, tools and peening hammers. Gives direction to helpers in the fabrication of ornamental-metal products.

May install finished product. May specialize in fabricating religious art work.

8339-112 SAMPLE MAKER, LEAF SPRINGS(metal fab., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: I PA: M 4 7

Develops, assembles and tests prototype automotive leaf springs prior to production run:

Studies drawings, narrative instructions, hand books and other sources of information to determine material, construction dimensions and operating characteristics of spring required. Calculates length and arch of leaves and compiles bill of material, to include components, such as clips, bushing inserts and liners. Writes and issues work orders for production of sample set of leaves and other components. Verifies hardness of leaves, using hardness-testing machine. Assembles spring, using bench press and hand tools. Tests assembled spring, using load-testing machine, to impose maximum safe load and to verify load characteristics of spring at specific deflections. Makes necessary changes to prototype spring and authorizes commencement of production run of approved spring.

8339-114 LIGHTING-FIXTURE MAKER(mach., weld. & forg.) DPT:380
GED: 4 SVP: 7 EC: I 5 6 PA: L 4 7

Sets up and operates machine tools and metalworking machines to machine, form and join metal parts of floor lamps, wall lamps and hanging fixtures, according to specifications:

Sets up and operates spinning lathes to spin brass, bronze, aluminum or steel sheet-metal stock into desired shape. Sets up and operates engine lathe to turn metal parts. Cuts and shapes sheet-metal, using metalworking machines, such as shears, bending machine and punching machine. Compares dimensions and shape of finished parts with drawings, using rule, micrometer, square and protractor. Solders, brazes and welds parts together, using spot welding and brazing equipment. Smooths surfaces and removes burrs and weld spatter, using belt sander.

May heat and bend metal to shape fixture parts. May attach glass parts, sockets and wires to metal parts to form fixture, using hand tools. May be designated according to type of fixture fabricated; for example, Chandelier Maker Floor-Lamp Maker

8339-118 GRID-MACHINE JOB SETTER(wire prod.) DPT:380
GED: 4 SVP: 6 EC: I PA: L 4 7

Sets up and adjusts machines that form wire grids for electron tubes: Verifies size of specified wire and machine accessories, using microscope and gauges or micrometer. Inserts wire into feed mechanism of machine. Installs specified shaping and cutting tools and control devices, such as ratchets and cams in machine, using hand tools. Adjusts feed mechanism, shaping and cutting tools, cams, ratchets and rollers to synchronize winding, shaping and cutting operations of machine, using hand tools and magnifying devices.

Refinishes tool surfaces and cutting blades, using power grinder. Examines first-run grids for accuracy, using microscope.

8339-122 LINK-WIRE-MACHINE SET-UP OPERATOR(metal fab., n.e.c.) DPT:380
GED: 4 SVP: 6 EC: I 5 PA: M 4 7

Sets up and operates link-wire machine to form linked wire fabric for flat bedsprings:

Studies work orders to determine spring dimensions and type of wire required. Utilizes knowledge of machine operation and bending characteristics of wire to select tool and die elements. Manually positions and fastens tools, dies and cams into required arrangement in machine to cut and bend wire by action of sliding rams in co-ordinated sequence. Places coils of wire on reels. Feeds wires through drive wheels and between dies of slides, using hand tools. Starts machine to form and link wire lengthwise and crosswise to produce fabric of specified dimensions. Inspects product, using template or rule. Adjusts machine setup to control dimensions of wire fabric. May pass operation of machine to tender after set-up phase.

8339-126 LOOM SETTER, WIRE WEAVING(wire prod.) DPT:360
wire-loom set-up man.
GED: 3 SVP: 6 EC: I 5 PA: M 3 4 5 6 7

Sets up power looms to weave wire into screening and cloth:

Studies work orders, diagrams and charts to set up machine to produce specified mesh and weave patterns. Selects, positions and installs machine parts, such as reeds, heddles, shuttles, cams and gears, using hand tools. Turns speed control knobs to synchronize action of machine to produce size and pattern of weave specified. Sets electric eye control which automatically stops machine when specified run is completed or when shuttle of warp wire runs out or breaks. Directs operator or helper to thread wire from back beam through heddles and reeds to cloth roll, and to install bobbins in shuttle. Starts machine to produce sample product. Inspects sample visually and with gauges, and readjusts machine to correct malfunctions. Assists in replacing or repairing broken parts of machine.

8339-130 METAL-CAN MACHINE SET-UP MAN(metal stamp., press. & coat.) DPT:380
production mechanic, tin cans.
GED: 3 SVP: 6 PA: M 4 7 EC: I 5 6

Sets up, adjusts and repairs variety of automatic multiple- operation machines that punch, form, bead, solder and seal tin can bodies: Lights gas burners under soldering vats and adjusts thermostats to regulate temperature of molten solder in machines. Sets up machines to accommodate different sizes of can bodies and ends by changing components and adjusting settings, using spacing gauges and mechanic's hand tools. Changes dies and punches, aligns magazines, sets timings and adjusts guides. Sets up and adjusts automatic end lining machines that spray rubber base sealing compound onto edges of tin can ends. Starts machines and observes operation to detect malfunctioning. Checks quality of soldered seams in finished can bodies. Measures critical dimensions, using micrometers and calipers. Replaces worn or defective machine parts, using mechanics hand tools. Assists machinist to dismantle and reassemble presses for overhaul.

May operate one or more automatic tin can fabricating machines. May set up, adjust and clean welding head of key-welding machine.

8339-134 AIRCRAFT PIPE AND TUBE FITTER(air & space-craft) DPT:481
GED: 3 SVP: 6 EC: I 6 PA: M 2 3 4 7

Cuts, bends and fits oil, fuel, air and hydraulic tubing and piping for use in aircraft:

Establishes location of cut-outs, holes and trim lines of parts and relationship of parts to each other, using measuring devices such as rules, scales and dividers. Cuts, fits, aligns, trims and bends tubing in jigs or fixtures, using hand tools and power bending equipment. Modifies holding fixtures or jigs to conform to configuration of tubing samples by placing and fastening guides, stops, cradles, clamps and rotation holders, using hand tools.

May bend assemblies after welding, using equipment, such as gas-flame torch, arbor press and hand tools.

8339-138 ORGAN-PIPE MAKER, METAL(misc. prod. fab., n.e.c.) DPT:681
GED: 3 SVP: 6 EC: I 5 PA: M 4 7

Forms metal pipes for pipe organs, using hand tools:

Hand-rolls metal sheets into tubular shape, using mandrel and hand tools. Scrapes edges of tube with hand tool to shape angle for soldering. Solders seam. Cuts mouth of pipe, using knife. Forms mouth of pipe to desired shape, by beating it with wooden mallet around metal or wooden mandrel. Hand-rolls or uses forming rolls to shape annealed sheet zinc into large pipes.

8339-142 ORGAN-BLOWER MAKER(misc. prod. fab., n.e.c.) DPT:481
GED: 3 SVP: 6 EC: I 5 6 PA: M 4 7

Makes metal turbine blower assemblies used in pipe organs:

Selects gauge and type of sheet metal from storage rack, according to work order. Locates and marks curved vane dimensions and reference lines on metal, using scribe and rule. Cuts sheet metal along reference lines to form vanes, using hand shears. Bends vanes to specified angle, using power brake. Drills screw holes at base of vanes, using electric drill. Aligns bases of vanes with central spindle, and screws them together. Welds outer rim on vanes, using portable-electric-welding machine. Places wheel on balancing shaft, and attaches weights to balance wheel. Installs turbine wheel in lower metal casing. Connects electric motor to turbine shaft and bolts it to casing, using wrenches. Bolts upper section of casing to lower section to form complete blower. Paints blower, using spray gun.

8339-146 METALWORKING-MACHINE SET-UP OPERATOR (metal stamp., press. & coat.) DPT:360
metal-fabricating-machine operator.
GED: 3 SVP: 5 EC: I 5 6 PA: M 3 4 5 6 7

Sets up and operates metalworking machines; such as, shears, cutoff saws, brakes, punch presses, forming rolls and drill presses, to make metal products, such as light structural components, sporting goods and metal furniture:

Lays out and marks reference lines and points on metal workpieces, using templates, rule, square, compasses and scale. Sets up and operates various metalworking machines to cut and shape metal components or products. Fits and assembles components, using fixtures, hand tools and portable power tools, such as grinders, drills and riveters. Operates machines, such as arbor press, rivetting press, brazing machine or resistance-welding machine to complete assembly. Tests products for accurate fit. Gives direction to 8339-270 METAL-FABRICATING-SHOP HELPERS (metal stamp., press. & coat.) assisting in fabricating, fitting and joining metal components.

May take measurements of windows, doors or awning sizes when fabricating such products on a custom basis. May be designated according to product fabricated or type of material worked on; for example,

Awning Maker
Screened- Door and Window Builder
Tent-Frame Maker
Tubular-Products Fabricator

8339-150 RUBBER-FOOTWEAR-PARTS DIE MAKER(mach., weld. & forg.) DPT:481
GED: 3 SVP: 5 EC: I 6 PA: L 4 7

Makes metal dies for rubber-footwear parts, using metalworking machines, hand tools and welding equipment:

Studies templates and confers with patternmaker to solve technical problems. Cuts, bends and welds metal to make dies to shape of templates, using bench cutter, bending machine and welding equipment. Examines dies for defects and conformance to templates. Punches identifying data on dies, using punch and hammer. Records die information and stores templates for future reference.

8339-152 PULPSTONE-CAGE BUILDER(metal fab., n.e.c.) DPT:482

GED: 3 SVP: 5 EC: I 5 6 PA: VH 4 7

Sets up and operates metalworking and welding machines to fabricate pulpstone-reinforcing cages:

Reads work order and calculates and assembles sheet steel, steel rods and rubber sheet stock required. Adjusts and operates cut-off saw to cut rods to required length. Sets up and operates roll-forming machine that bends rods into rings. Sets up and operates butt-welding machine to weld rings into hoops. Sets up and operates power shear to cut stringer blanks to calculated dimensions from sheet steel. Sets up and operates punch press to shape ring-support lugs in stringers. Assembles hoops and stringers to form cages. Cuts segment joints from rubber sheet. Selects template and traces number of joints required on rubber. Cuts out rubber joints with scissors, and bundles and tags them with work order number. Delivers cages and joints to pulpstone fabricating area, using push truck.

8339-154 SAFETY-PIN-MACHINE SET-UP OPERATOR(misc. prod. fab., n.e.c.) DPT:680

GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Sets up and operates battery of automatic or semi-automatic machines to twist coils in pointed lengths of wire and form and attach caps and guards to wires to make safety pins:

Installs cutting and forming dies in machine according to size of pin specified, using hand tools. Loads feed-rolls with reels of metal strip used to make caps and guards. Scoops pointed wires into gravity-feed hopper and starts machine. Observes operation to detect jamming of mechanisms and extracts jammed pin parts, using pick, screwdriver and pliers. Measures samples of completed pins for conformance with specifications such as length, diameter of wire, size of springcoil and width of pin, using micrometers and fixed gauges. Examines pins for malformation of caps or guards, and opens and closes sample pins to test operation. Adjusts guides, tension bars, cams, feeder arms and stops, and synchronizes moving parts of machine to correct malfunctions. Replaces worn cutting or forming dies, using hand tools.

8339-158 WIRE WEAVER, CLOTH AND SCREEN(wire prod.) DPT:662

GED: 3 SVP: 5 EC: I 5 PA: M 4 7

Operates power loom to weave wire mesh cloth for products such as filters, insect screening, sieves and strainers:

Reads specifications to determine quantity, type and size of wire. Positions spools of wire on spindles of creel. Verifies specified size of wire, using micrometer or wire gauge. Fastens wire ends to back beam of loom. Starts motor to wind and transfer wire from creel to beam. Threads warp wires individually through heddles and between teeth of comb and fastens ends to roller. Adjusts spring of loom to required tension, using wrench. Inserts bobbin in shuttle, fastens short wire end to roller and pushes switch to start loom. Observes loom operation to detect faulty weaving or wire breaks. Reweaves and ties broken wires, using pick and magnifying glass. Counts mesh of woven cloth to ensure that specifications are met, using pick and counting glass. Removes roll of finished cloth from loom, using electric hoist. Directs helper who aids him in the weaving of wire mesh cloth or screening. May wind bobbins while loom is in operation.

8339-162 STRANDING-MACHINE OPERATOR(wire prod.) DPT:662

cable-machine operator.

GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Operates stranding machine to fabricate wire rope or cable:

Positions spools of wire of specified type and gauge, into cradles, manually or using electric hoist, and secures them in place. Positions take-up spool onto shaft and adjusts travel of distributor to width of spool. Threads wires through holes on inside of edge of machine and through twisting head and coils it around capstan, following drawings or sample of stranded wire as a guide. Nails or hooks stranded wire onto take-up spool. Changes or adjusts gears for specified direction of twist and speed of capstan and cradle, using wrenches. Pours lubricant into grease pot and opens valve to lubricate strands. Starts machine and regulates speed of take-up spool shaft. Observes machine to detect malfunctioning. Cuts wire when specified footage has been wound, and wraps cable end with wire by hand or using mechanical

wrapping tool. Operates resistance welder to butt weld ends of new or broken wires. Measures diameter and lay of stranded wire or cable using micrometers and rule. Directs helper who aids him in the fabrication of wire rope or cable.

May tend automatic wrapping or taping attachments on machine. May be designated according to machine operated; for example, Bunching-Machine Operator

8339-166 BRAZER AND HAMMERER(misc. prod. fab., n.e.c.) DPT:681

GED: 3 SVP: 5 EC: I 6 PA: M 4 7

Shapes sheet metal into brass-wind-instrument bells and bell-necks:

Traces pattern of bell onto sheet metal, using template and scribe. Cuts out bell and bell-neck blanks, using hand shears. Hammers bell blank over bell shaped mandrel, and butts seam. Brazes bell, using oxy-acetylene torch. Smooths seam, using file and power hammer. Removes scratches from bell, using fine abrasive cloth. Bends bell-neck blank down middle by hand. Bends neck blank on mandrel, using forming device. Rolls bent blank around mandrel and shapes neck, removes dents and forms seam, using wooden mallet. Brazes bell-neck seam, using oxy-acetylene torch. Smooths brazed seam with file.

May operate spinning lathe to spin bell-head and form bead at edge of bell-head.

8339-170 WIRE WEAVER, BENCH LOOM(wire prod.) DPT:682

GED: 3 SVP: 5 EC: I 5 6 PA: M 4 7

Forms heavy wire screens used for partitions, draining racks, aggregate screens and window guards, using bench loom:

Reads specifications to determine quantity, type and wire size. Verifies size of wire, using micrometer or wire gauge. Measures, crimps and cuts wire to specified lengths, using steel scale, wire cutters and crimping machine. Inserts ends of warp wires in heddles. Operates loom to raise and lower alternate warp wires. Slides shoot wire between warp wires and pulls it into position by hand. Measures position of shoot wire with scale to ensure specified spacing. Operates loom to reverse warp wires, fasten inserted shoot wire and prepare for next shoot wire. Removes finished screen from loom and stacks it for pickup.

8339-174 CABLE SWAGER AND STRETCHER(wire prod.) DPT:684

cable stretcher and tester.

GED: 3 SVP: 5 EC: I 6 PA: M 4 7

Makes and tests cable assemblies, such as aircraft or boat control or check cables:

Lays out cable on measuring table and clamps cable end to holding block. Places cable between electrodes of electric-cutting device and pulls lever causing electrodes to cut and fuse cable ends. Installs dies in staking and swaging machines, using screwdriver and wrenches. Slips fitting over cable end, sets it in die of staking machine and positions fitting at specified distance from cable end, using gauge. Presses pedal to crimp fitting onto cable to position it for swaging. Inserts crimped fitting between dies of swaging machine, starts machine and turns cable by hand as fitting is swaged between dies. Positions ball stop at specified distance from cable end and swages it onto cable with swaging machine. Verifies diameter of swaged ball stop, using gauge. Solders ends of cable. Inserts cable fittings in holding attachments of proof-loading machine to pre-stretch and prove security of fittings. Immerses cables in anti-corrosion solution and attaches identification tags. Packs cable assemblies into bags for storage.

8339-178 LAY-OUT MARKER(metal stamp., press. & coat.; struct., plate & ornam. metal) DPT:684

GED: 3 SVP: 5 EC: I 6 PA: M 3 4 7

Traces patterns from templates and marks specifications for fabricating operations onto metal sheets, plates and structural shapes: Measures stock, using rule, and locates centerline for positioning template. Clamps, bolts or holds template on workpiece. Marks reference lines with scribe, and marks hole locations with center punch or by spot drilling. Stacks or moves workpieces to assigned locations, using hand truck or crane.

May lay out straight lines and hole locations as detailed on drawings.

- 8339-182 WIRE-ROPE-SLING AND CABLE SPLICER**(wire prod.) DPT:684
 cable splicer; sling-maker.
 GED: 3 SVP: 5 EC: 1 6 PA: M 4 7

Makes wire-rope slings from wire rope and installs fittings on ends of sling legs or straight cables:

Cuts wire rope or cable to length with wire cutter or abrasive cutting wheel. Marks rope or cable at specific points with chalk to indicate location of loops. Wraps rope or cable around bench hobs and secures it with tie wires to form loops in end of sling legs or straight cables. Splices rope or cable by interweaving end strands of wire into body strands to form sling or end loops, using tapered spike and splicing vise. Wraps and solders wire around whole loop or inserts metal thimble on inside of loop and hammers thimble flanges to secure loop. Finishes loop eyes by hooking loop onto wire-winding machine and ties end of wire strand onto body. Depresses pedal to start sling revolving, and guides strand along length of splice to provide protective covering. Installs dies in swaging machine, using screwdriver and wrenches and depresses pedal to swage fittings onto straight cables or sling legs. Verifies size of wire, cable or rope, and finished splice, using micrometer, vernier or fixed gauges. May braze loose ends of wires, using oxy-acetylene torch. May repair damaged slings or cables.

- 8339-186 EMBOSsing-MACHINE OPERATOR**(metal stamp., press. & coat.) DPT:682
 GED: 3 SVP: 4 EC: 1 5 6 PA: M 4 7

Operates machine to emboss designs on sheet metal:

Installs embossing roll of specified design and size in machine. Adjusts roll clearance and tension, width of feed table and guides, according to dimensions of sheet metal, using hoist, gauges and hand tools. Starts machine and feeds sheets into roll or places coil of metal on spindle and threads coil end through machine onto rewinder. Measures depth of embossed design of first run workpiece, using depth micrometer or dial indicator and re-adjusts machine embossing roll to meet specifications. Removes embossed roll of material from winder, using hoist or jib crane and installs empty winder reel.

- 8339-190 ART-METAL-WORKER HELPER**(metal fab., n.e.c.) DPT:684
 GED: 3 SVP: 4 EC: 1 5 6 PA: M 4 7

Helps workers to fabricate ornamental metal products such as light fixtures, church statuary, lamps, plaques and other metal artwork by performing any combination of the following duties:

Cuts metal stock to specified size, using shears and saws. Helps bend or twist metal stock, using hand tools, bending jigs, scroll irons and power brakes. Welds, brazes, forge welds or bolts components together, at designated locations, as directed. Builds fire in heating forge. Heats and hammers metal to specified shapes, using special peening hammers. Grinds and polishes surfaces of workpieces to desired finish. See also definition for term title, 02-160 HELPER (any ind.).

- 8339-194 FIXTURE MAKER, PLATING EQUIPMENT**(metal fab., n.e.c.) DPT:684
 GED: 3 SVP: 4 EC: 1 5 PA: M 4 7

Fabricates and repairs fixtures, rods, baskets and hooks used for suspending articles in plating, cleansing and painting vats:

Cuts metal stock to size, using handsaws, powersaws, shearing and forming machines, and following working sketches or drawings. Bends metal, using vise, hammer or press. Drills and threads holes, using drill and hand-taps. Bolts, screws or rivets parts together, using wrenches, screwdrivers or riveting equipment. Brazes, solders and welds parts together.

May clean contact areas with wire brush. May dip workpiece in rubber or plastic solution, and hang in oven to cure.

- 8339-198 REINFORCING-CAGE MAKER**(wire prod.) DPT:684
 GED: 3 SVP: 4 EC: 1 6 PA: H 3 4 7

Cuts, forms and welds wire mesh and steel rods to fabricate cages used in reinforcing concrete pipe or other concrete forms:

Obtains roll of wire mesh of specified gauge and unrolls and stretches

out mesh for cutting. Measures desired length of wire mesh, using steel rule. Cuts strands, using hand or pneumatic cutter. Feeds wire mesh into rollers of bending machine and turns adjusting wheel to shape frame or cage sections. Places formed mesh and rods on floor or in special forming stand preparatory to welding. Tack-welds sections together, using arc-welder or fastens ends of sections together, to form tube, using special bending tools and equipment. Cuts reinforcing steel rods using cutting torch. Bends lugs along edge of wire mesh in alternate directions to facilitate positioning in mould, using special hand tool.

- 8339-202 STRAIGHTENER, HAND**(mach., weld. & forg.) DPT:684
 GED: 3 SVP: 4 EC: 1 5 PA: M 4 7

Straightens metal workpieces to specifications, using hand tools and knowledge of properties of metal:

Places workpiece on surface plate, or mounts and rotates it between centers to detect irregularities visually or with dial indicator. Positions workpiece on flat surface, anvil or special fixture and hammers it at point of irregularity to straighten it. Forces mandrel through cylindrical workpieces, such as pipes and tubing to remove dents and kinks. Measures straightened workpiece for conformance to specifications, using straightedge, dial indicator, feeler gauges or contour projector.

- 8339-206 REINFORCING-CAGE-WINDING-MACHINE OPERATOR**(wire prod.) DPT:682
 GED: 3 SVP: 3 EC: 1 5 6 PA: H 4

Operates cage-winding machine to produce cylindrical wire cages used as reinforcing in concrete pipe:

Operates control panel to move welding electrodes and longitudinal wire guides to form drum for shaping and sizing of cage. Loads spools of wire of specified size on spindles, and threads wires from spindles through tensioning rollers and feeder arm of machine. Starts machine to wind and space wire to form cage. Starts welding device to weld longitudinal rods and winding wire at points of intersection. Inspects cage to ensure that welds and dimensions are as specified. Cuts cage to specified length, using hand shears or cutting torch. Operates butt-welder to join new rolls of feed wire as spools are depleted, and smooths butt welds, using portable grinder.

- 8339-210 TUBE BENDER, HAND**(metal stamp., press. & coat.) DPT:684
 GED: 3 SVP: 3 EC: 1 PA: M 4 7

Bends metal and plastic tubing around forming blocks or between rollers of bending device to produce components for products such as refrigeration systems, electrical heating units or hydraulic systems:

Adjusts rollers or forming dies and stops of bending device, according to required location of bends. Marks tubing at location of bend or places end of tubing against stop of bending device. Heats plastic tubing in hot oil or water to facilitate bending. Bends tubing by hand or pulls lever to force rollers against workpiece to bend it to required shape.

May flare tubing by forcing end against rotating cone. May draw outline of tubing bends on cardboard or cut wood-forming blocks on band saw, following templates.

- 8339-214 BARBED-WIRE-MACHINE TENDER**(wire prod.) DPT:685
 GED: 3 SVP: 3 EC: 1 5 6 PA: M 4

Tends machine that automatically twists barbs between strands of wire to form barbed-wire fencing:

Mounts reels of smooth wire on feed rack of machine, using hoist. Threads end of feed wires through machine. Butt welds ends of feed wires to ends of wires in machine. Adjusts feed and tension rollers and barb spacing, using hand tools. Sets automatic counter for specified length of wire in roll, and starts machine. Stops machine, cuts wire with cutter, and removes roll of barbed wire from machine. Attaches identification tag to roll and places it on pallet or handcart.

8339-218 SLIDE-FASTENER-LINK-MACHINE TENDER
(misc. prod. fab., n.e.c.) DPT:685
wire coiner.
GED: 3 SVP: 3 EC: I 5 6 PA: M 3 4 7

Tends battery of automatic machines that make metal slide fastener scoop impressions in wire and trim and form fastener links, using special rolling dies, shavers and shears:

Changes rolling dies according to gauge of wire to produce specified links. Mounts roll of wire on spindle, threads wire end through machine rolling, trimming and cutting units, and starts machine. Examines processed wire with microscope and micrometer to verify that impressions are aligned and of correct pitch. Notifies supervisor of machine malfunction.

8339-222 FITTER, METAL FABRICATING(metal fab., n.e.c.) DPT:664
GED: 2 SVP: 3 EC: I 6 PA: M 4 7

Fits together preformed components of fabricated-metal products to prepare them for welding or assembly:

Positions parts in fixture to examine alignment visually or verifies alignment, using square, rule and template. Files and grinds parts to remove burrs and surplus material, or alter shape. Straightens or bends parts by hammering or using straightening press. Secures parts to fixture or fastens parts together, using clamps or bolts. Keeps production records. Directs helpers in fitting together preformed components during fabrication of metal-formed products.

8339-226 AUTOMOBILE-BUMPER STRAIGHTENER(motor vehicle) DPT:684
bumper straightener.
GED: 2 SVP: 3 EC: I 5 6 PA: H 4 7

Straightens and repairs automobile bumpers:

Selects specified make and model of damaged bumpers from storage. Positions bumper in hydraulic press and starts press to restore original shape to bumper, using templates to verify contours. Removes smaller dents, using sledge hammer. Positions bumper in bench vise and grinds out hammer marks, scratches and rust areas, using portable grinder.

May cut and weld together sections from several similar shaped bumpers to form single salvageable unit, using flame cutting and oxy-acetylene or electric-arc welding equipment.

8339-230 FITTER HELPER(mach., weld. & forg.; struct., plate & ornam. metal) DPT:684
GED: 2 SVP: 3 EC: I 5 6 PA: H 2 3 4

Assists fitters to position, align and fit together plates, structural shapes and weldments, preparatory to assembly into fabricated structural products, performing any combination of the following duties:

Holds, positions and reads tape or measuring rods to assist in taking lay-out measurements. Places and moves blocking, braces and jigs to hold parts. Hammers wedges and drift pins, and turns turnbuckles to bring assemblies together. Pulls pry bars to align parts. Grinds or chips away rough edges, surplus weld or scale, using portable grinder or pneumatic hammer. Positions and clamps or bolts together butt straps or parts, using hand or power wrench. Assists other workers by hooking and slinging heavy workpieces, bucking rivets, drilling and reaming holes and cleaning up work area. See also definition for term title, 02-160 HELPER (any ind.).

May mark finished work with item or order number, using paint brush. May drill holes and fit nameplates to structural steel products. May be designated according to specific type of worker helped; for example,

Fitter Helper, Structural Metal(struct., plate & ornam. metal)

Plate Worker, Helper(struct., plate & ornam. metal)

Welder-Fitter, Helper(mach., weld. & forg.)

8339-234 WIRE BENDER, HAND(wire, prod.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4 7

Bends wire to form wire frames for upholstered items, such as mattress and box-spring assemblies, chairs and automotive seats, by using wire-bending jig:

Positions bending pegs on jig table according to specifications and tightens them with wrench. Inserts one or more wires in holding

device and depresses pedal to drive bending arms around pegs to bend wire to required angle, or bends wire around pegs, using lever. Connects ends of wires, using electric resistance-butt-welding machine.

8339-238 WIRE-FRAME LAMP-SHADE MAKER(wire prod.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Constructs wire lamp-shade frames, working from drawings, sketches and models:

Makes jigs to hold framing wires in position during assembly and welding. Inserts forming blocks and wire stops into machine, and adjusts stops and rollers, using hand tools. Loads wire into automatic-wire-cutting machine and starts machine. Feeds lengths of wire, cut to size, into wire-forming machine. Positions top and bottom frame rings over jig, and spot welds frame members to rings.

May operate punch press to punch holes in frame parts to permit riveting instead of welding.

8339-242 CHAMFERING-MACHINE TENDER(explosives) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Tends battery of machines that flare mouths of shell cases to facilitate insertion of bullets:

Starts each machine and starts flow of compressed air to cool chamfering tools. Observes shell cases sliding down feed and discharge tubes, straightening any cases that are out of position. Observes flaring and rolling tools in operation to ensure proper functioning, and replaces and resets them as necessary, using hand tools. Examines samples from each machine for burrs, ragged edges, or scratches and determines if dimensions are within prescribed tolerances, using gauges, micrometers and calipers.

8339-246 COIL-REWIND-MACHINE TENDER(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 3 EC: I 6 PA: M 3 4 7

Tends machine that rewinds sheet metal coils into compact rolls for shipment or further processing:

Measures sheet width and thickness, using tape and micrometer. Adjusts machine arbor in accordance with width of coil. Places full coil on stand, using hoist. Inserts end of coil in rewind arbor and starts rewind machine. Observes operation to detect telescoping or excessive tightness of coil. Cuts off damaged portions or joints between rolls, using shears. Removes and stores rewound coils, using crane or hoist. May stitch new roll to end of previous roll, using wire stitching machine.

8339-250 COIL-SPRING-ASSEMBLY-MACHINE TENDER(metal fab., n.e.c.) DPT:685
automatic-coil-machine operator.
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Tends machine that joins coil and helical springs to form spring assemblies for inner spring mattresses, and furniture:

Sets end stop on machine according to number of coils required in each row. Places coil springs in rows of channels on machine table. Loads spools of spring wire on machine. Inserts ends of spring wires in feeders that form wire into helical springs, and rotate and move springs toward coils. Depresses pedal to start feeder that guides and laces helical springs into top and bottom edges of coil springs. Pushes lever to activate bar that cuts helical springs and moves coils forward. Inserts more coils in channels to form additional rows and repeats cycle until specified number of rows of coil springs are completed. Pulls release lever to eject completed spring assembly from machine. Adjusts machine and relieves snagging or jamming, using hand tools.

8339-254 LINK-WIRE-MACHINE TENDER(furn.; wire prod.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: M 4 7

Tends previously set up automatic machines that cut, bend and join wire links to form wire-mesh mattress supports for cots, folding beds and other furniture:

Mounts spools of wire on machine arbors and threads ends into feed

rollers. Starts machine that forms lengthwise and crosswise spring links. Stops machine after desired length of wire mesh has been fabricated. Inspects wire-mesh fabric and replaces missing or defective links, using wire snippers and pliers. Adjusts cams and setscrews of machine to correct malfunctions.

8339-258 POCKET-SPRING-MACHINE TENDER(metal fab., n.e.c.) DPT: 685
GED: 2 SVP: 3 EC: I PA: M 4

Tends machine that automatically spins wire coil springs and sews them into cloth pockets to form units for mattress-innersprings: Mounts spools of wire, fabric and cotton thread on machine spindles. Inserts wire and fabric ends into machine guides and rollers and threads machine needles. Starts machine and folds chain of pocketed coils as it emerges on conveyor. Removes springs at regular intervals and tests them for uniformity of pressure under plunger of stationary dial gauge. Turns regulating wheel to adjust wire cutter for specified coil length. Turns setscrew on sewing machine to regulate thread tension. May feed pockets onto anvil to facilitate spring insertion by machine.

8339-262 SPIRAL WEAVER(wire prod.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: L 4

Tends machines that coil and interlace wire strands into products, such as wire screen, chain link fence and conveyor belts: Threads wire through box of lubricant, between pulling dies and around coiling die. Depresses lever that starts machine to coil wire. Adjusts machine to cut and loop next wire through last coil of previous strand to begin interlacement of strands. Starts machine that automatically continues interlacing coils of second strand through coils of first strand. Weaves mesh of specified length and crimps or loops ends of wire to finish off top and bottom of mesh. Dismantles and cleans coiling die, using wrench and rags. May produce chain-link fencing with galvanized or other type of coated wire and be designated accordingly, Chain-Link-Fence-Machine Operator

8339-266 CHAIN-MAKER FEEDER(wire prod.) DPT:686
GED: 2 SVP: 3 EC: I 5 PA: M 4

Feeds one or more machines that automatically cut wire, and form and weld chain: Loads coil of wire on turntable of machine, using hoist. Straightens and files end of wire, and threads it into machine. Starts machine that cuts, forms and welds chain. Connects formed chain with previously formed chain to produce continuous length of chain. Replaces defective links. May lubricate machines and clean chain.

8339-270 METAL-FABRICATING-SHOP HELPER (metal stamp., press. & coat.) DPT:687
metalworking-machine helper.
GED: 2 SVP: 3 EC: I 5 6 PA: H 3 4 7

Helps workers engaged in operating metal-fabricating machines which fabricate metal products, performing any combination of the following duties:

Lifts, moves, clamps and bolts dies, fixtures and workpieces on machines, using hoists and hand tools. Fills reservoirs and oil cups with lubricants. Brushes or blows dirt from dies and machines, using air hose. Removes burrs, sharp edges, scale or rust from workpiece by filing, grinding, brushing and scraping, using hand tools and portable grinder. Hammers out bent or warped areas in metal. Paints metal stock or workpieces, using paint brush. Sorts, marks or tags finished work. Transports material, using handtruck or hoist, or signals crane operator. Attaches ropes or lifting devices to heavy workpieces to prepare them for moving by hoist. See also definition for term title, 02-160 HELPER (any ind.).

May place workpieces in heating furnace or preheat them, using hand torch. May be designated according to machine operator helped; for example, Bending-Machine-Operator Helper
Brake-Operator Helper
Forming-Roll-Operator Helper
Punch-Press-Operator Helper
Shear-Operator Helper

8339-274 WIRE-BASKET MAKER(wire prod.) DPT:684
GED: 2 SVP: 2 EC: I PA: M 4

Forms and assembles wire mesh containers, using bending machine and wire spirals: Cuts mesh to specific sizes, using pattern or markings on table, and shears. Shapes wire mesh containers, such as degreasing baskets, animal cages, waste baskets, and other containers by bending wire mesh into specified shapes and sizes, using hand operated bending machine, pliers and crimping tool. Assembles cut mesh panels, using wire spirals to form container joints.

8339-278 BULLET-SHAPING-MACHINE TENDER(explosives; metal fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 3 4 7

Tends machines that groove, knurl, die-size and lubricate bullets for small arms ammunition: Scoops bullets from supply box and deposits them on machine apron. Starts machine and manually inserts bullets into holes of moving feed dial. Observes operation to detect jamming and clears jammed bullets, using fingers or wire pick. Measures bullet samples to verify location and depth of grooves, and length and diameter of bullets, according to specifications, using fixed gauges. Examines bullets to ensure that grooves are filled with lubricant. Adjusts machine by turning stop nuts and set screws, to produce acceptable bullets.

8339-282 EMBOSSING-MACHINE TENDER(explosives) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends battery of automatic machines that roll grooves or knurls on brass shot-gun-shell heads: Places empty trays under delivery chutes. Moves levers to start machines and flow of brass heads from hoppers. Clears heads jammed in feed and groove mechanisms, using screwdriver and wire picks. Examines heads for defective trimming, splits, dents and scratches. Verifies locations of grooves or knurls on embossed heads at specified intervals, using fixed gauges. Notifies machine repairman of malfunctions.

8339-286 KNITTER, WIRE-MESH(wire prod.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Tends several machines that automatically knit strands of wire to form metal mesh for use in products, such as scouring pads: Installs spool of metal or plastic wire on frame of machine and inserts flyer spindle into hole of spool. Threads wire through guide on flyer, through pulley of rotating frame, around and under hooks of knitting needles and fastens end to feed roller. Starts and observes machines to detect faulty knitting or wire breaks. Measures width of mesh with ruler to ensure specified dimensions are maintained. Stops machine to re-thread and tie broken wires, replace spools of wire and remove rolls of mesh. Notifies supervisor of machine repairs or adjustments required. Stacks rolls of mesh for pickup. Sprays wire with oil, soap suds or other lubricant to reduce friction, depending on type of wire being used.

8339-290 METAL-SPONGE MAKER(wire prod.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that forms metal sponges from wire: Places spool of wire on spindle and threads end of wire around tension rollers and around winding spindle. Installs and threads additional spools of wire according to type of sponge to be made. Presses button to start machine that twists, curls and winds wire around spindle to form sponge. Cuts wire when sponge has been formed. Removes sponge from spindle and pulls and pats it to specified shape. Packs sponge in cartons.

8339-294 INDUSTRIAL-KNITTING-NEEDLE-MACHINE FEEDER(misc. prod. fab., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Feeds various previously set-up machines that fabricate industrial-knitting needles: Carries pans of needle blanks or semi-processed needles to machine.

Strings up or aligns needles before feeding them into machines. Feeds machines by setting handfuls of needles in feeding slides. Sorts out defective needles for réprocessing or scrapping. Observes functioning of machines. Stops machines to remove jammed needles. Notifies machine setter or supervisor when machine malfunctions. Empties catch pan, and places tally card with processed needles. Applies compound to felt buffers or steel brushes of machines that remove burrs from edges and polish metal needles.

**8339-298 STRANDING-MACHINE-OPERATOR
HELPER(wire prod.) DPT:687
cable-machine-operator helper.
GED: 2 SVP: 2 EC: 1 5 6 PA: M 4 7**

Helps machine operators to fabricate wire rope or cable: Selects spools of wire according to job card. Helps position spools of wire on spindle of winding reel manually or with hoist. Turns handwheel or pulls lock pin to release shaft preparatory to installing take-up spool onto shaft. Assists in threading wire through stranding head. Places spools of finished cable on handtruck for removal to storage. See also definition for term title, 02-160 HELPER (any ind.). May remove unused wire from spools, using spool stripper.

**8339-302 WIRE-WEAVER HELPER(wire prod.) DPT:687
wire-loom helper.
GED: 2 SVP: 2 EC: 1 5 PA: H 3 4 7**

Assists wire weavers in weaving wire-mesh cloth or screening: Transports beams, magazines, wire stock and machine parts to looms, using handtruck or forklift. Attaches wire from spools to warp beam. Threads warp wire through heddles and reeds of machine, and ties sections of warp wire together. Removes beams of finished screen or cloth from looms with forklift and transports them to stockroom or finishing department. Removes spools and bobbins from automatic spooling machines and racks them onto magazines. See also definition for term title, 02-160 HELPER (any ind.).

**8339-399 OTHER METAL SHAPING AND FORMING
OCCUPATIONS, EXCEPT MACHINING**

This group includes metal shaping and forming occupations not elsewhere classified; for example, those who specialize in forming metal parts or products; such as, garment hangers, buckles, trunk valances, wound gaskets, swaged mechanical pencil and pen parts, hand woven wire screen, electrical connectors, bell-end pipes and fan blades. Typical examples of occupational titles covered by this residual group definition are:

Buckle-Assembling-Machine Tender(misc. prod. fab., n.e.c.)
Crimping-Machine Feeder(wire prod.)
Fan-Blade Aligner(metal fab., n.e.c.)
Gasket Winder(metal fab., n.e.c.)
Pipe-Belling-Machine Tender(metal stamp., press. & coat.)
Swager, Pen and Pencil(misc. prod. fab., n.e.c.)
Valance Maker, Trunk(misc. prod. fab., n.e.c.)

835-WOOD MACHINING OCCUPATIONS

This minor group includes occupations concerned with shaping wood into parts or products by machining to specified dimensions by such means as sawing, cutting, boring, sanding, milling and planing. Activities include: measuring, laying out and setting up work and machines, and machining cork, wood by-products and other materials when the methods applied to machining wood are used. These occupations are classified in the following unit groups:

8350 Foremen, Wood Machining Occupations
8351 Wood Patternmaking Occupations
**8353 Wood Sawing and Related Occupations,
Except Sawmill**
**8355 Planing, Turning, Shaping and Related Wood
Machining Occupations**
8356 Inspecting Occupations, Wood Machining
8357 Wood Sanding Occupations
8359 Wood Machining Occupations, n.e.c.

8350-FOREMEN, WOOD MACHINING OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in shaping wood into parts or products by machining.

8350-110 FOREMAN, INSPECTING OCCUPATIONS, WOOD MACHINING (furn.; woodworking)

DPT:138

Supervises and co-ordinates activities of workers engaged in quality control of machined-wooden parts or products, (Unit Group 8356):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8350-114 FOREMAN, PLANING, TURNING, SHAPING AND RELATED WOOD-MACHINING OCCUPATIONS(furn.; woodworking) DPT:138

Supervises and co-ordinates activities of workers engaged in setting-up, operating, tending and feeding woodworking machines that plane, turn, shape, mill, rout, mortice and drill wooden workpieces to desired shape and size, in the manufacture of wooden parts or products, (Unit Group 8355):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular activity and be designated accordingly,
Foreman, Planing

8350-118 FOREMAN, WOOD PATTERNAKING OCCUPATIONS (furn.; woodworking) DPT:138

Supervises and co-ordinates activities of workers engaged in making wooden patterns for items, such as moulding patterns, shoe lasts and hat blocks, (Unit Group 8351):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8350-122 FOREMAN, WOOD SANDING OCCUPATIONS(furn.; woodworking) DPT:138

Supervises and co-ordinates activities of workers engaged in smoothing, cleaning and roughing wooden surfaces, using sandpaper or similar abrasives, (Unit Group 8357):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8350-126 FOREMAN, WOOD SAWING AND RELATED OCCUPATIONS, EXCEPT SAWMILL (furn.; woodworking) DPT:138

Supervises and co-ordinates activities of workers engaged in setting up, operating and tending power-operated-circular, band or reciprocating-type saws that cut wood, paperboard and other non-metallic materials into various lengths, widths, thicknesses or shapes, (Unit Group 8353):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8350-199 OTHER FOREMEN, WOOD MACHINING OCCUPATIONS

This group includes wood-machining foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in framing timbers for utility poles and structures, and machining small-wooden items, such as gun stocks and shuttles. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Framing Mill(woodworking)
Foreman, Gun Stocks(woodworking)
Foreman, Shuttles(woodworking)

8351-WOOD PATTERNAKING OCCUPATIONS

This unit group includes occupations concerned with making wooden patterns used to form sand moulds, full size or scale models of production line items, models for copy lathes, and custom made hat blocks. Activities include: following drawings, templates or samples to achieve specific shape and dimensions, laying out, sawing, planing, turning, shaving, drilling, gluing, nailing, sanding and painting, using a variety of hand tools and woodworking machines.

8351-110 PATTERNAKER, WOOD(woodworking) DPT:281
GED: 4 SVP: 8 EC: I 5 6 7 PA: M 4 7

Plans, lays out and constructs wooden patterns used in forming sand moulds for castings, analyzing drawings and using hand and power tools:

Lays out pattern on wood stock and divides pattern into sections to facilitate removal of pattern from mould, utilizing knowledge of moulding and casting techniques, and using marking and measuring devices, such as scribe, shrink-rule and square. Cuts and shapes parts, using woodworking machines, such as bandsaw, lathe, planer and router. Fits and fastens parts together to form pattern or section, using fastening devices; such as, glue, nails, dowels and screws. Trims, smooths and shapes surfaces, using carpenters' hand tools. Assembles sections and verifies conformance of pattern dimensions to specifications, using templates, straightedges, calipers and protractors. Glues fillets along interior angles of pattern. Repairs or rebuilds worn or broken patterns. Finishes patterns by applying shellac, lacquer, paint, or other material.

May use black paint to show coring required in mould.

8351-114 MODEL MAKER, WOOD(woodworking) DPT:281
sample maker.

GED: 4 SVP: 7 EC: I 5 6 7 PA: M 4 7

Constructs full-size or scale wooden models of production-line items; such as, machinery, household appliances, transportation equipment, furniture and toys:

Selects wooden stock and marks layout of parts, using precision equipment; such as, scribe, square, protractor, surface plates, height gauges, and scales, following drawings, draft, or sample. Operates band-saw, lathe, planer, router, and other woodworking machines to cut and shape lumber following outline of part. Fastens wooden parts together with dowels, glue, nails, bolts, screws, and other fasteners. Planes, shaves, files, scrapes, and sands model to attain specified shape. Verifies dimensions and contours of model during hand-forming process, using templates and measuring devices. Fabricates work aids, such as scrapers or templates for own use.

May wax and polish finished model. May construct plastic or metal models, or assemble metal parts, made to specifications by machine shop, using hand and power tools, bolts, screws, and measuring instruments.

8351-118 MODEL MAKER, LAST(woodworking) DPT:381
GED: 4 SVP: 6 EC: I 7 PA: L 4 7

Shapes wooden blocks into shoe lasts for use as models in copy lathe: Lays out and cuts templates to specified shape and size, using scribe, measuring instruments, shears, or razor cutter, to verify dimensions and contour of finished last models. Selects last model of backpart (heel-ball of last) having same size and shape as specified on order. Mounts last model of backpart and wooden block in copy lathe that automatically turns down end of block to match backpart of last model. Removes model and partially turned block from lathe and verifies duplication by measuring block at prescribed points. Clamps partially turned block in vise. Shapes toe area to specified size and contour, using drawknives, spokeshaves, files, sandpaper, glass, and templates. Sandpapers model to specified finish. Hammers tacks and files tack heads along edges to protect model when used in copy lathe. May shape last models from wooden blocks, using hand tools only, when identical-last model of backpart is not available.

8351-122 HAT-BLOCK MAKER(woodworking) DPT:381
GED: 3 SVP: 6 EC: I 7 PA: L 4 7

Shapes and finishes wooden-crown and brim hat blocks to specified style and size: Selects plaster-crown-model master of hat block to be manufactured. Shellacs plaster model and applies adhesive tape to outer surface to protect model during processing. Inserts and secures model and wooden block in duplicating machine. Sets up, starts, and tends machine that follows contour of model to produce rough-wooden duplicate from wooden block. Removes rough-crown block from machine, clamps it in vise, and shaves it to specified contour with spokeshave. Sets wooden-crown block in gauge to determine height of crown. Judges shape and marks high spots to be removed. Measures block with steel tape to ascertain head size. Secures block on turning machine, starts machine, and sands rotating block by hand. Selects brim template and traces pattern of brim on wood stock. Cuts, saws, drills, and shaves work piece, following outline to produce rough-brim block, using woodworking tools. Smooths and finishes rough-brim block to specified shape and dimensions, using spokeshave, files, and sander.

8351-126 TRIMMER, LAST(plastic prod.; woodworking) DPT:684
toe-and-heel finisher.
GED: 3 SVP: 4 EC: I 5 7 PA: L 4 7

Shapes and smooths wooden or plastic-shoe lasts to specified contour and size, using hand and power tools: Files toe area of last to specified contour according to instructions and outline drawn on bottom of last. Sandpapers toe area by hand or machine to attain required size and finish. Verifies finished size with templates. Removes excess material from heel to establish correct length of last, using sanding machine. Verifies length, using gauge. Replaces worn sandpaper belts on sanding machine. May tend band-saw to separate lathe center from last turning at specified point.

8353-WOOD SAWING AND RELATED OCCUPATIONS EXCEPT SAWMILL

This unit group includes occupations concerned with operating and tending power operated circular, band or reciprocating type saws that cut wood, paperboard and other non-metallic materials into various lengths, widths, thicknesses or shapes. Occupations concerned with operating saws in a mill to produce lumber are classified in Unit Group 8231, SAWMILL SAWYERS AND RELATED OCCUPATIONS. Occupations concerned with producing veneer and plywood sheets are classified in Unit Group 8233, PLYWOOD MAKING AND RELATED OCCUPATIONS.

8353-110 BAND-SCROLL-SAW OPERATOR(misc. prod. fab., n.e.c.; woodworking) DPT:682
scroll-saw operator.
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates band-saw to cut curved or irregular designs in wooden stock, fibre glass, parchment or paperboard: Positions template and marks cutting outline on stock. Stacks specified number of sheets of material and clamps them together. Starts saw and holds, guides, and turns wood stock or stack of sheets against blade following cutting outline. Adjusts height of blade guides according to thickness of stock. Turns handwheel to loosen tension of band between bandwheels and replaces saw band. May install jigs and attachments, using clamps and wrenches. May clean and maintain machine, using pneumatic hose, brush, cloth, oil can and grease gun.

8353-114 JIGSAW OPERATOR(woodworking) DPT:682
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates machine equipped with narrow, vertical-reciprocating saw blade to make irregular-external and internal cuts on wood stock: Starts machine and places stock on machine table. Holds and guides stock against saw following outline marked on wood to make cuts or uses special jig to guide work piece against saw. Detaches saw blade from machine, using hand tools, inserts it through previously-bored hole in stock, and reattaches blade to machine to make internal cuts. Replaces dull-saw blades. May lay out pattern on wood stock, using template and marker. May drill starting hole when making internal cut, using portable-electric drill.

8353-118 RESAW OPERATOR(woodworking) DPT:682
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates saw that cuts timbers and planks into boards of lesser thickness according to work orders: Observes lumber on conveyor or table as it approaches saw to determine cut to be made. Turns handwheels, pushes buttons, depresses pedal, or manipulates levers to adjust distance between saw and feed rolls, and to move saw guide to regulate thickness of cut. Moves levers to control speed of saw and feed rolls. Pushes end of lumber into feed rolls. May start and stop conveyor to control movement of lumber to resaw location. May perform minor maintenance duties, such as changing saw blades and lubricating saw, using hand tools and oil can. May be designated as to type of saw operated or item produced and be classified accordingly; for example, Horizontal-Resaw Operator Vertical-Resaw Operator Wood-Blank Sawyer

8353-122 VARIETY-SAW OPERATOR(woodworking) DPT:682
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates adjustable-circular saw to rip, cross-cut, bevel, groove or mitre wood or other non-metallic material: Selects saw blade according to type of cut and secures it on saw arbor. Turns handwheel or crank to adjust saw or table to specified angle or depth of cut. Adjusts and secures guides to length, width or angle required. Feeds material against saw blade and sets finished work aside. Verifies measurements of cut stock with rule or square.

8353-126 STOCK CUTTER, WOOD(woodworking) DPT:682
GED: 3 SVP: 3 EC: I 5 6 7 PA: M 4 7

Operates saws to cut lumber and plywood according to customer's order or plant-production specifications: Selects kind and grade of wood specified on work order or is supplied lumber selected by another worker. Measures and marks lumber, or sets and adjusts guide fence, to produce size stipulated in specifications, using rule and square. Cuts lumber to specified length and plywood to required length and width, using circular-saw. Replaces worn or defective saw blades, using hand tools. May feed lumber through planing machine to smooth edges prior to gluing, and glue pieces together to form panels, using glue and bar clamps.

8353-130 CUT-OFF-SAW OPERATOR(any ind.) DPT:682
cross-cut-saw operator.
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4 7

Operates circular saw with single or multiple blades to cut wood stock to desired length or remove defects:

Adjusts and locks end and back stops or guides on saw table, or bolts saws to shaft and turns handwheel to space saws, according to requirements. Starts saw. Cuts material by one of the following methods: 1. Places stock on feed conveyor. 2. Places stock on movable table and pushes table past saw. 3. Places stock against guides and pushes stock into saw. 4. Positions stock on table and operates hand lever or pedal to move saw through stock.

May grade stock according to standards. May be designated according to type of machine operated or purpose of operation; for example, Corner Trimmer(woodworking)

Defect Trimmer(woodworking)

Double-Cut-Off-Saw Operator(woodworking)

Salvage Sawyer

Swinging-Cut-Off-Saw Operator(woodworking)

Treadle-Cut-Off-Saw Operator(woodworking)

Utility-Trimsaw Operator

8353-134 RADIAL-ARM-SAW OPERATOR(woodworking) DPT:682
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4 7

Operates radial-arm saw to cut boards and other stock to specifications:

Selects and fits saw blade according to type of cut to be made or material to be cut. Adjusts and secures radial-arm and saw arbour to required angles, and saw height for depth of cut. Places stock on saw table against stop and aligns work piece with saw blade. Starts saw and pulls it across stock to make cut. Rip-saws material to width by holding it against rip fence and pushing stock into saw.

May replace saw blade with attachments to shape, rout, groove, mortise, or drill work piece.

8353-138 RIPSAW OPERATOR(woodworking) DPT:682
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4 7

Operates machines with one or more band or circular-saw blades to cut boards or wood stock along grain:

Adjusts and locks rip fence or saw guides according to width and depth of cut or adjusts distance between saws by positioning collars on saw shaft and tightening them with set screws. Moves levers to adjust height and speed of feed rolls according to thickness of board and starts saw(s). Positions stock on saw table against guide or rip fence and pushes stock into saw, or aligns it on feed rolls, using shadow-line or rip fence as guide.

May change saw blades or adjust tension of band-saw, using wrench. y May cut stock in order to match wood grain. May grade stock in accordance with standards. May be designated according to type of machine used or work performed; for example,

Band-Ripsaw Operator

Circular-Ripsaw Operator

Gang-Ripsaw Operator

Ripsaw-Grader Operator

Ripsaw Matcher

8353-142 HEADINGS SAWYER, COOPERAGE DPT:685
(woodworking)
GED: 2 SVP: 3 EC: I 5 7 PA: M 4 7

Tends band saw equipped with revolving table to cut out headings for barrels, hogsheads or kegs:

Clamps heading mat, boards or sheet of veneer in position on circular table. Adjusts blade guides of band saw according to thickness of heading material, by loosening nut, and raising or lowering blade guides. Starts saw and turns table, or starts motor that turns table, to revolve material against saw and cut circular headings. Removes headings from table to designated area for further processing.

8353-146 BAND-SAW-MACHINE TENDER(woodworking) DPT:685
GED: 2 SVP: 2 EC: I 5 6 7 PA: L 4 7

Tends band-saw that cuts wood or paper products to specified shape: Adjusts guide fence or positions turntable at specified distance from saw blade, using wrench and ruler, or calibrations on saw table. Stacks specified number of sheets of stock on saw table. Clamps sheets together or secures bundle in position on turntable. Starts machine and guides bundle against saw, following cutting line, or revolves turntable by hand to press bundle against saw blade, to cut material to specified shape. Places cut pieces on skid or in tote box.

May mark cutting line on top sheet of bundle, using pattern and pencil. May keep production records.

8353-150 HOLE-SAW TENDER(woodworking) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends saw that cuts holes of specified diameter in square blanks in the manufacturing of woodenware:

Selects and fits correct-size-hole saw. Positions and secures L- shaped guide on saw bed. Places wood blank against guide and starts saw. Depresses pedal to force saw into wood blank. Releases pedal to raise saw. Removes and piles cut parts according to shape and size.

8353-154 MITRE-SAW TENDER(woodworking) DPT:685
GED: 2 SVP: 2 EC: I 5 6 7 PA: L 4 7

Tends mitre-saw to cut moulding stock for picture frames to specified length and angle, using mitre-saw:

Turns screws to adjust feed guides to width of moulding and to adjust end stop that measures moulding for cutting. Inserts moulding between guides and depresses pedal to lower saw that cuts one end of stock at required angle. Places moulding against end stop and under saw to cut other end of moulding to specified length and angle.

May tend mitre-saw to ensure tight fit by matching two mitred ends of moulding, placing matched assembly in V-shaped fixture of machine, and passing joint through saw. May be designated according to type of saw tended; for example,

Double-Mitre-Saw Tender

Single-Mitre-Saw Tender

8353-158 SAWING-MACHINE TENDER(asbestos & min. wool) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Tends machine that automatically cuts and trims asbestos tubes, used to insulate pipe:

Adjusts saw blades for specified depth and length of cut, using wrench. Places tube on feed bed or conveyor that carries it through series of circular saws that cut tube wall longitudinally and trims tube ends to specified length. Observes feed of tubes through saws and inspects cut edges. Rejects defective tubes.

May pack cut and trimmed tubes into case.

8353-162 STAVE SAWYER(sawmill) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: H 4

Tends stave saw that cuts barrel, keg, tub, and bucket staves from log sections or stave bolts (lengths of split logs):

Lays bolt or log section on carriage and holds it against fixed guide. Starts machine and feeds rough stock into stave saw (rotating open-end cylinder, toothed on open end) by manually moving carriage. Withdraws carriage and sets stave aside.

8355-PLANING, TURNING, SHAPING AND RELATED WOOD MACHINING OCCUPATIONS

This unit group includes occupations primarily concerned with setting up, operating and tending one or more woodworking machines that plane, turn, shape, mill, rout, mortise or drill wooden workpieces to make wooden parts or products in a factory or shop. Occupations concerned with operating and tending large planers and milling machines in a lumber mill, to prepare lumber for stock, are classified in Unit

Group 8231, SAWMILL SAWYERS AND RELATED OCCUPATIONS. Occupations concerned with assembling wooden parts machined by workers in this unit group are classified in Minor Group 854, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS.

8355-110 WOODWORKING-MACHINE SET-UP OPERATOR(furn.; woodworking) DPT:280
GED: 4 SVP: 7 EC: I 5 6 7 PA: M 3 4 7

Sets up and operates a variety of woodworking machines; such as, saws, planers, routers, sanders and tenoners to cut, plane, shape and sand stock to specifications:

Studies drawings, work order or sample part to determine specifications. Selects and installs appropriate knives, saws, drill bits or cutter heads on drum, spindle or in chuck of machine, and balances cutter heads, using hand tools. Attaches or installs guides, fixtures or jigs to table or bed of machine with clamps or bolts, and turns handwheels and moves levers to adjust stops, guides and angle and height of table. Adjusts feed rollers or tailstock position as required. Selects direction and speed of rotation of workpiece to produce smoothest finish. Starts machine to produce items and feeds stock into machine or observes automatic-feed mechanism. Verifies conformance of work to specifications and adjusts machine as necessary.

May perform maintenance and repairs on machines. May specialize in setting-up machines for use by other workers and be designated accordingly,
Woodworking-Machine Set-Up Man

8355-114 SMOKING-PIPE MAKER(misc. prod. fab., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: I 6 7 PA: L 4 7

Fabricates, assembles, and finishes briar smoking-pipes, using a variety of woodworking machines:

Selects block of briar according to size and shape of pipe specified. Mounts block in lathe fixture. Selects and inserts cutters in lathe chuck. Starts machine and moves block into cutters, manually, to bore and partially turn and face pipe bowl. Clamps block in facing machine and guides block against pre-selected cutters to shape lower part of bowl. Places shank in holder of drill press, and drills, faces and countersinks shankhole, using multi-purpose cutter. Selects appropriate bit and drills hole through shank into bowl chamber. Removes stummel (combined bowl and shank) from drill press. Cuts stock for pipe stem from slab of vulcanized rubber, using hacksaw. Drills, counterbores, shapes and finishes stem, using hand and power tools. Fits stem to stummel, or selects finished stem from supplied stock and counterbores it to fit stummel. Inserts metal bushing in stem, using hand or arbor press. Assembles pipe by mounting stem into shank manually. Smooths assembled pipe utilizing successively finer abrasive paper. Evaluates hardness of briar to determine quality by estimating resistance of briar to sanding. Selects and installs burrs in rotary-chuck and manipulates pipe against rotating tool to produce beveled or carved effect. Dips pipe in hot stain solution to bring out grain and to colour briar. Immerses stem in hot oil to make stem pliable. Bends stem manually to desired shape, and sets stem by cooling under cold water. Coats inside of bowl with specified mixture to sweeten bowl, using brush. Inspects pipe for flaws, cracks and other defects. Polishes assembled pipe, using buffing wheel and polishing compounds. Grades pipe according to quality and grain of briar, and stamps trade mark on pipe, using press. Repairs broken pipes, using hand and power tools.

8355-118 BILLIARD-CUE MAKER(sport. & toy) DPT:382
GED: 3 SVP: 6 EC: I 5 6 7 PA: L 4 7

Shapes billiard cues from woodstock and fits ferrules and tips to cues, using a variety of woodworking machines, special clamps and glue:

Selects and grades exotic or other hardwoods according to quality of billiard cues to be manufactured. Operates saws, lathes, boring machine and rabbeting fixture to produce cue butts, shafts and inlays according to specifications. Assembles shafts, butts and inlays, using brush, adhesives and clamps. Operates belt sander to shape and smooth cues to size, taper and finish, and verifies diameter and taper, using calipers and scale. Feeds shaft end into pre-set tenoning chuck to reduce diameter and glues fibre ferrule to shaft end. Secures cue tip on end of shaft, using brush, adhesive and special clamp. Sands tip to

blend with cue point, using sanding machine. Dips cue in lacquer to apply finish coating and places cue in drying rack.

May fabricate two-piece cues by cutting finished cue in half, drilling and tenoning shaft and butt portions and gluing threaded-nylon fittings in position. May manufacture custom cues according to customers' specifications and repair broken or damaged cues and be classified accordingly,
Custom-Cue Maker and Repairman

8355-122 SPINDLE CARVER(furn.) DPT:681
carver, machine.
GED: 3 SVP: 6 EC: I 5 6 7 PA: L 4 7

Carves decorative designs on wooden-furniture parts by manipulating stock freehand against spindle-mounted cutter:

Studies drawing or pattern to select cutters suitable to reproduce design on type of wood stock supplied. Mounts cutter on machine spindle, using hand tools. Holds and guides stock freehand against rotating cutter to duplicate master pattern. Selects and installs series of cutters to duplicate intricate designs. Cleans and oils machine.

May sharpen cutters on bench grinder. May perform minor machine maintenance, using hand tools.

8355-126 BRIAR-BOWL TURNER(misc. prod. fab., n.e.c.) DPT:682
frazier; stummel turner.
GED: 3 SVP: 5 EC: I 6 7 PA: L 4 7

Operates special-purpose lathes to turn and shape briar blocks into smoking-pipe bowls:

Selects and installs cutters and balancing weights in rotary-cutter heads according to shape of stummel (bowl and shank) specified. Clamps block in holding device and pulls lever to feed block against cutters to shape shank. Removes block, secures it in second lathe, and pulls lever to feed block against cutters to shape sides, face and top, and bore bowl interior. Clamps shank of block in third lathe and pulls lever to feed front and bottom areas of bowl to rotating cutters. Turns handwheels to manipulate bowl against cutters to complete bowl forming. Inspects workpiece for defects after each cutting operation. Grinds and hones cutters.

8355-130 WOOD-TURNING-LATHE OPERATOR(furn.; woodworking) DPT:682
lathe operator; wood-lathe turner
GED: 3 SVP: 5 EC: I 5 6 7 PA: L 4 7

Operates wood-turning lathe to turn and shape wood stock by holding chisel against rotating stock:

Studies drawing or reads work order or specifications to determine set-up data. Positions wood stock between spur center in headstock spindle and tail center in tailstock and turns handwheel to force centers into stock. Adjusts turning speed according to size of work by changing belt position or by turning speed-control handwheel. Positions and clamps tool rest. Starts machine, places gouge chisel on tool rest and in contact with stock and moves gouge to reduce square stock to rough cylinder. Lays out cutting lines according to drawing, using scale and pencil. Resets speed control at speed appropriate to diameter of workpiece. Selects chisel according to type of cut specified and manipulates chisel against rotating workpiece to cut shapes. Verifies dimensions, using calipers and scale.

May smooth surface of work by holding sandpaper against rotating workpiece. May apply wax or other finishes to workpiece.

8355-134 ADZING-AND-BORING-MACHINE OPERATOR DPT:662
(woodworking)
tie-machine operator.
GED: 3 SVP: 4 EC: I 5 PA: M 3 4 5 6 7

Operates machines to trim, bore, incise and stamp railroad ties and utility-pole crossarms, preparatory to treating with wood preservative: Adjusts guides and stops, and installs adzing cutters, boring bits, incising rollers and identification and dating punches, according to work order, using hand tools. Starts machines and conveyor system, and observes operation. Directs machine feeders and off-bearers and inspects finished workpieces. Replaces worn or broken drills, cutters and knives.

May manually feed ties or crossarms into machines.

8355-138 BORING-MACHINE OPERATOR(furn.;
woodworking) DPT:682
GED: 3 SVP: 4 EC: I 5 6 PA: M 4 7

Operates single- or multiple-spindle-boring machine to bore holes in wooden parts:

Studies drawings, sample part, work order or specifications to determine size, type and setting of boring tools, stops, jigs, and guides required. Selects and installs boring tools and accessories in machine, using rule and wrenches. Adjusts spindle locations and stops to regulate spacing and depth of bore, using rule, template and wrenches, or turns handwheels to move table and guides to position stock under bits and regulate depth of bore. Positions workpiece against guides and depresses pedal to engage boring bit with workpiece. Verifies location, size and depth of hole, using template or rule or by fitting parts together.

May ream or countersink holes as required. May be designated according to type of machine operated or operation performed; for example,

Boring-Machine Operator, Horizontal
Bunghole Borer(woodworking)
End-Bore Operator
Multiple-Boring-Machine Operator.

8355-142 CHUCKING-AND-BORING-MACHINE OPERATOR (furn.) DPT:682
trim-and-bore operator.
GED: 3 SVP: 4 EC: I 5 7 PA: L 4 7

Operates machine to saw, bore, and round ends of chair posts, rails and backs:

Turns handwheel to adjust space between chucks and saws. Selects and installs cutter heads according to size of stock and angle of cut, and spaces boring bits according to specified location of holes, using wrenches and gauges. Starts machine and guides workpiece into machine that automatically clamps and processes it. Places processed workpiece on conveyor or in designated area. Keeps production records.

8355-146 CHUCKING-MACHINE OPERATOR(furn.;
woodworking) DPT:682
GED: 3 SVP: 4 EC: I 5 7 PA: L 4 7

Operates machine to taper ends of implement handles or to cut round tenons on furniture parts, such as legs and rungs:

Selects, aligns and secures blades in cutter head in accordance with specifications. Adjusts stops according to length of cut specified, and adjusts feed-yoke or jig according to diameter of stock. Positions and clamps stock in feed-yoke or jig. Starts machine and turns handwheel or depresses pedal to feed stock into cutter head or cutter head into stock. Verifies accuracy of settings, using caliper or scale and adjusts settings as required.

May operate machine equipped with automatic feed. May operate machine equipped with saw that trims end of stock, or machine that simultaneously cuts tenons on both ends of stock and be designated accordingly; for example,

Chuckling-and-Sawing-Machine Operator
Double-End-Chucking-Machine Operator

8355-150 DADO OPERATOR(furn.; woodworking) DPT:682
dado-saw operator.
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates single- or multiple-blade machine to cut grooves, slots, notches, recesses, rabbets, lap joints and tenons in wooden parts:

Examines drawings, work orders or sample part. Selects and mounts circular saws and chip breakers, or circular saw and wobble washers to cut slots of specified width. Adjusts height of blade or table, by turning handwheels, to control depth of cut. Sets up machine for multiple-slot cutting, using spacers, hand tools and scale. Adjusts position of guide fence to control location of slots. Starts machine and pushes wooden parts into cutters. Inspects depth, width and location of slots, using scale, and adjusts machine as required.

May pull overhead-swing saw through stock to cut groove. May be designated according to part produced or type of operation; for example,

Cleat Notcher
Groover
Overhead-Dado Operator
Wobble-Saw Operator

8355-154 DOVETAIL-MACHINE OPERATOR(furn.;
woodworking) DPT:682
lock-corner-machine operator.
GED: 3 SVP: 4 EC: I 5 7 PA: M 4 7

Operates routing machine to cut matching-dovetail or rectangular notches for interlocking joints in edges or ends of wooden stock:

Studies drawings, specifications or sample to determine set-up data, such as size, depth and location of cuts to be made. Selects and installs router bits, jigs and guides, using chuck key and hand tools. Spaces spindles on shaft at specified intervals, using wrenches, and turns handwheels or sets stops to regulate depth of cut. Clamps workpiece to jig, inserts pin in guide-hole of machine table, and places jig over guide pin. Starts machine, depresses pedal to raise table and feed workpiece into rotating bits, and moves workpiece under bits or slots in jig. Verifies spacing of notches, using rule, or assembles notched edges together to verify spacing and depth of cut.

8355-158 LOUVER-ROUTER OPERATOR(woodworking)
DPT:682
GED: 3 SVP: 4 EC: I 5 7 PA: L 4 7

Operates automatic machine to space and cut mortises in stiles for insertion of slats to form louvered doors and shutters:

Studies sample or reads work order to determine set-up data, type of wood and quantity required. Selects, installs, and adjusts cutter heads on spindles according to length, depth, and angle of mortises to be cut. Installs machine-ratchet gear in spacing track according to specified distance between mortises and design of door or shutter, and locks ratchet gear in place. Positions and clamps two stiles on spacing tracks to produce matched pair. Starts machine to force cutting head into stile and to automatically advance head.

8355-162 PLANER OPERATOR(furn.; woodworking)
DPT:682
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates planer to dress lumber and reduce it to specified size:

Reads work order and turns handwheel to adjust gap between cutter head and table to produce thickness required. Positions pressure bar and chip breaker, using hand tools. Adjusts feed rolls and guide fence. Starts machine, exhaust blower and conveyors, and slides stock against guide to align it on feed rolls. Inspects planed surface and verifies thickness of dressed stock, using scale or gap gauge, and adjusts planer as required. Changes cutter knives, using hand tools.

May sharpen cutter knives in machine, using handstone. May operate planer equipped with two cutter heads to dress both sides of stock simultaneously. May operate equipment with two double-planers to dress four sides of lumber and produce specified width and thickness in one operation. May be designated according to type of planer operated, or operation carried out; for example,

Double-Planer Operator
Finish-Planer Operator
Rough-Planer Operator
Single-Planer Operator

8355-166 SHAPER OPERATOR(furn.; woodworking)
DPT:682
GED: 3 SVP: 4 EC: I 5 6 7 PA: L 4 7

Operates machine to cut grooves, rabbets, flutes or pattern shapes on surface or edges of wooden stock:

Studies master pattern, drawings, or shop orders to determine set-up specifications. Selects, mounts and adjusts cutters, guides, spindle and collars to make specified cuts. Starts machine and feeds straight stock past rotating-cutter head while holding stock in firm contact with guide or fence. Produces cuts on stock for shaped items by clamping rough-shaped stock to appropriate pattern. Manipulates stock through periphery of pattern while holding pattern in contact with spindle collar, to simultaneously shape edge contour and reproduce pattern.

May sharpen and mount knives in cutter heads. May be designated according to shaper operated, part produced, or type of operation performed; for example,

Detail Shaper
Double-Spindle-Shaper Operator
Panel-Raiser Operator

8355-170 SHAPER OPERATOR, AUTOMATIC(furn.;
woodworking) **DPT:682**
profile-shaper operator
GED: 3 SVP: 4 EC: 1 5 7 PA: L 4 7

Operates automatic-woodworking machine that follows contour of model or template to shape wooden parts:

Selects and secures model or template to machine table. Selects cutter knives according to shape of cut specified. Locks and balances knives in cutter head and installs cutting unit in machine, using hand tools. Positions and clamps workpiece in each loading station and starts machine. Monitors operation as slowly-revolving table brings template into contact with following roller. Engages workpiece with high-speed cutter, or positions workpiece under clamps and depresses pedal to actuate mechanism that automatically closes clamps, moves carriage containing workpiece against rotating cutters, returns carriage to starting position, and releases clamps. Inspects workpieces, using scale or template to verify dimensions, and adjusts machine as required. Loads and unloads work stations.

8355-174 SPLITTING-MACHINE OPERATOR,
CORK(woodworking) **DPT:682**
GED: 3 SVP: 4 EC: 1 5 PA: H 4 7

Operates machine to split slabs or blocks of cork or composition corkboard into sheets of specified thickness:

Sets dial gauge and turns handwheels to adjust feed-roller gap, table height and band knife to cut sheet of prescribed thickness. Pulls block from roller conveyor to machine table. Feeds block into rollers which force it against knife to cut sheet. Measures sheet with dial-indicator gauge and makes machine adjustments to meet thickness specifications. Cuts first sheets from each of several blocks. Readjusts table height and roller gap after each successive pass on batch of blocks to split blocks to sheets of specified thickness. Sharpens knife by adjusting position of integral-grinding wheel. Places cork blocks in steam-heated oven to condition them prior to cutting. Performs cleaning and maintenance on splitting-machine.

8355-178 TENONER OPERATOR(furn.; woodworking) **DPT:682**
GED: 3 SVP: 4 EC: 1 5 6 7 PA: L 4 7

Operates woodworking machine to tenon ends of stock:

Examines drawings, master pattern or work order to determine size, type and setting of cutter heads, guides and jigs required. Selects, mounts and positions end-trim-circular saw, using hand tools and scale. Selects and installs cutter heads and spacers on vertical spindle. Adjusts position of heads by turning handwheel. Adjusts guides and jigs on machine table. Starts machine, positions stock and pushes table through machine or places stock on feed conveyor. Verifies dimensions of stock, using scale or template, and adjusts machine as required. May operate machine to trim and cut tenons on both ends of stock and be designated accordingly, Double-End-Tenoner Operator.

8355-182 TRIMMING-AND-BORING-MACHINE
OPERATOR(furn.) **DPT:682**
double-cut-off-and-bore operator; end-trim-and-bore-
machine operator.
GED: 3 SVP: 4 EC: 1 5 6 7 PA: M 4 7

Operates machine to trim or mitre ends of wooden-furniture parts and bore holes for dowels:

Reads drawings and work orders or studies master pattern to determine set-up specifications. Selects and installs drill bits in chucks to produce holes of specified diameter and depth, using wrench or key. Sets angle and spacing of cut-off saws according to specifications. Sets up work-positioning devices, such as fixtures and stops on machine table, and adjusts pneumatic clamps, using hand tools. Starts machine and positions stock under clamps that hold stock during automatic trimming and boring cycle. Removes workpiece from machine and verifies dimensions, using tape measure, scale and carpenter's square. Adjusts drills or saws to ensure conformance to specifications.

8355-186 MORTISING-MACHINE OPERATOR(furn.;
woodworking) **DPT:682**
GED: 3 SVP: 4 EC: 1 5 7 PA: L 4 7

Operates machine to cut mortise slots in wooden parts:

Selects mortising chisel or mortise-chain-saw assembly according to size of mortise specified. Adjusts height of machine table or spindle stops for depth of slot specified. Lays out cuts to be made on stock, using rule and pencil. Clamps stock to machine table. Starts machine and pulls lever or depresses pedal to force cutting head into wood. Turns handwheels to release stock from clamps or to reposition table and stock for further cutting.

May be designated according to type of mortising machine operated; for example,

Chain-Mortiser Operator
Chisel-Mortiser Operator

8355-190 WOODEN-BOWL-LATHE
OPERATOR(woodworking) **DPT:662**
GED: 2 SVP: 4 EC: 1 5 7 PA: H 4 5 6 7

Operates special-purpose lathe to cut and shape several bowls of decreasing size from same piece of wood stock, assisted by co-worker: Measures bowl blank to determine number and size of bowls to be cut, using rule and chart. Signals co-worker to secure bowl blank to face plate on headstock. Selects and installs curved knives on sliding arm, according to size of bowl being machined, using wrench. Starts lathe, pushes lever to force curved knife into wood to shape inside of first bowl. Cuts outside of first bowl with larger curved knife which forms inside of next larger bowl until smaller bowl is detached from inside of larger bowl and falls into container held by co-worker. Signals co-worker to polish surface of each bowl. Sharpens knives, using grindstone and files.

May operate additional special-purpose lathe to cut and shape small-wooden bowls from blanks salvaged from other bowl-making operations.

8355-194 ROUTER OPERATOR(furn.; woodworking) **DPT:682**
GED: 3 SVP: 3 EC: 1 5 6 7 PA: L 4 7

Operates single- or multiple-spindle-routing machine to cut slots, grooves, designs or recesses in wood workpiece:

Studies drawing, sample part, or specifications to determine size, depth and location of cuts to be made. Selects and installs specified bits, jigs and guides on machine according to type of routing to be done. Clamps or tacks workpiece to jig. Turns handwheel to adjust table height or adjusts spindle to regulate depth of cut. Starts machine and depresses pedal to raise table and engage wood with rotating bit. Slides workpiece under rotating bits, following guides, lines or slots in jig to produce specified cut.

8355-198 SWING-TYPE-LATHE OPERATOR(furn.;
woodworking) **DPT:682**
GED: 3 SVP: 3 EC: 1 5 7 PA: M 4 7

Operates swing-type lathe equipped with rotary cutters to turn wooden articles, such as implement handles or table legs:

Studies drawings, specifications or sample part to determine machine settings. Mounts appropriate cutters on machine spindle, using template, scale and hand tools. Adjusts spindle and workpiece turning speeds according to size or type of wood. Positions workpiece between spur and tailstock centers and moves lever to secure workpiece. Starts lathe and moves lever to swing rotating stock against high-speed cutters until shaping is completed. Stops lathe and verifies dimensions of product, using template or calipers and scale.

May operate lathe incorporating automatic feed and be designated accordingly, Swing-Type-Lathe Operator, Automatic

8355-202 WOOD-CARVING-MACHINE OPERATOR(furn.;
woodworking) **DPT:682**
GED: 3 SVP: 3 EC: 1 5 7 PA: L 4 7

Operates multiple-spindle-carving machine to duplicate master pattern simultaneously on pieces of wooden stock:

Selects and sets-up appropriate master pattern, tool bits and tracing point, using hand tools. Positions and clamps wood blanks between

chucks on machine bed. Holds master spindle and moves tracing point over and around pattern contours to produce carvings on blanks. Verifies accuracy of carving against specifications, using calipers, rule or templates. Sharpens bits, using bench grinder. May operate machine equipped with mechanism that rotates blanks and pattern to reproduce carving on sides of blanks. May install finish bits and tracing point after rough cuts are made to complete carving.

8355-206 SHUTTLE MAKER(woodworking) DPT:682
shuttle planer; shuttle spotter.
GED: 3 SVP: 3 EC: I 5 6 7 PA: L 4 7

Operates machines to cut, shape and finish shuttles used in looms: Cuts wood or plastic material into shuttle blanks of specified dimensions, using circular saw. Smooths flat surfaces of block, using jointer and sanding machine. Inserts block in machine carriage that forces end of block against cutting head that automatically shapes shuttle ends to specified contour. Brushes adhesive compound on pre-cut fibre strips and aligns strips on sides of wooden shuttles. Operates manual press to bond strips to shuttles. Clamps shuttles in rack and hangs rack in drying room. Removes rack from drying room. Bends and glues fibre strips to tapered contour of shuttle ends, using adhesive compound, hammer and wedges. Returns shuttles to drying room.

8355-210 SMOKING-PIPE BURLER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: I 5 6 7 PA: S 4 7

Cuts burling or carved effects on smoking-pipe bowls, using rotary burrs: Selects and mounts burr in machine to give burling depth specified. Starts machine and manipulates pipe bowl against burr to cut burling on bowl surface. Mounts successive series of burrs to produce carved effect.

8355-214 PANEL-JOINTER-MACHINE TENDER DPT:685
(woodworking)
plywood-tenoner operator.
GED: 3 SVP: 3 EC: I 5 6 7 PA: H 3 4 7

Tends machine that cuts tongue-and-groove or lap joints in edges of plywood or veneer panels: Installs or mounts multiple-cutter heads and adjusts cutter guards, using hand tools. Starts machine and makes test cut to verify set-up. Arranges stock so that widest pieces are processed first. Inspects, sorts, and piles finished panels by species of wood, size, and quality. Prepares production report.

8355-218 WOODEN-BOWL-LATHE-BOTTOM MAN DPT:665
(woodworking)
GED: 2 SVP: 3 EC: I 5 6 PA: H 4 5 6 7

Tends special-purpose lathe to cut and shape bottoms of wooden bowls of decreasing size from same piece of wood, working as member of team: Secures pre-drilled square-wooden block to face plate or shaft of head stock. Positions hinged-cutting and shaving fixture on center of rotating-bowl blank. Pulls lever and applies pressure so that curved blade shaves and shapes bottom of smallest bowl and each succeeding larger bowl after previous bowl is cut and separated from bowl blank. Holds basket over rotating workpiece to catch bowl as it is cut from bowl blank by lathe operator. Deposits finished bowls in container for further processing. Removes remaining piece of bowl blank from head-stock shaft for further processing by other workers. Transports bowl blanks from storage room to machine area.

8355-222 BOWL-BLANK-BORING-AND-FINISHING-MACHINE OPERATOR (woodworking) DPT:682
GED: 2 SVP: 3 EC: I 5 PA: H 4 7

Operates machine to bore small hole in center of wooden-bowl blank to facilitate securing blank in special purpose lathe and to remove lathe centers on completion of shaping: Selects and installs holding fixture, according to size of bowl blank, on machine table and positions bowl blank in fixture. Installs drill bit in

machine chuck. Starts boring machine and depresses pedal to raise table and bore hole in center of blank. Removes drilled blank from holding fixture and routes blank to lathe operator. Installs cutter head in chuck of boring machine and positions shaped bowl in holding device. Starts machine and depresses pedal to raise table and engage cutting head with bowl blank to remove lathe centers from interior and exterior of bowl. Piles bowls in container for further processing.

8355-226 CROZE-MACHINE OPERATOR(woodworking) DPT:682
GED: 2 SVP: 3 EC: I 6 7 PA: H 4 7

Operates machine equipped with trim-saw-and-dado-cutter assembly to cut croze (groove) in wooden staves, into which tank bottom is fitted:

Starts machine. Places stave on machine table, aligns mark on stave with cut-off-saw blade and depresses pedal to actuate pneumatic clamp that secures stave in position. Pulls lever to move pneumatic saw- and-dado-cutter assembly across stave to cut croze. Releases clamp and slides stave to next work station.

8355-230 TOOTH-PICK-LATHE OPERATOR(woodworking) DPT:682
GED: 2 SVP: 3 EC: I 5 PA: H 3 4 7

Operates lathe-type machine to peel log section into thin sheet and cut sheet into strips for further processing into tooth-picks: Lifts log section onto machine bed assisted by co-worker. Pulls lever to raise machine bed to center and secure log section between headstock and tailstock. Adjusts lathe knives to cut strips of specified thickness and width. Starts machine and engages clutch to start log rotating. Pushes lever and applies pressure so that lathe knives peel sheet from log section and cut sheet into strips of standard width. Examines strips for defects, such as holes, knots and improper thickness.

8355-234 COPY-LATHE TENDER(misc. prod. fab., n.e.c.; woodworking) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: L 4 7

Tends one or more copy lathes that turn and shape wooden or plastic blanks into duplicates of master model: Clamps model of article to be duplicated next to scanning arm of copy lathe and mounts wood or plastic blank between lathe centers. Starts machine to activate cutters, which are guided by follower (roller) that follows contour of model, to shape workpiece. May adjust machine, using hand tools, to regulate size of duplicated article. May rough shape wood stock preparatory to mounting on lathe, using bandsaw. May be designated according to the articles produced; for example, Gunstock Shaper Last-Lathe Tender Last Turner

8355-238 DOWEL-MACHINE TENDER(woodworking) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: L 3 4 7

Tends machine that cuts dowel-rod from squared stock: Adjusts knives, guides and feed rolls according to size and finish of dowel-rod to be cut. Starts machine and inserts stock between feed rolls that force it through cutting head. Verifies machine settings and size of stock, using calipers and micrometer. May tend machine that cuts spirals or longitudinal grooves while rounding stock. May keep production records. May tend machine that rounds, chamfers, and cuts dowel rod to length and be designated accordingly, Pin Maker.

8355-242 EMBOSSING-MACHINE TENDER(woodworking) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4 7

Tends machine that imprints ornamental designs on picture-frame mouldings: Installs embossing wheel in machine, using hand tools. Turns handwheel to lower embossing wheel over bed of machine according to thickness of moulding, and sets feed guides. Ignites and positions

gas jets to heat embossing wheel, regulating heat to prevent burning of moulding. Starts machine, places moulding in guides and pushes it under embossing wheel. Examines embossing on moulding and adjusts wheel to correct depth of indentation.

8355-246 LAMINATED-BOWL-MACHINE TENDER(woodworking) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: M 4 6 7

Tends special-purpose machine that simultaneously cuts five, concentric, slant-edged, ring-shaped sections, used to fabricate laminated bowls, from one piece of flat-circular-wooden stock: Mounts bowl stock on machine shaft so that shaft pin is inserted in pre-bored hole in center of stock. Secures bowl blank on shaft for cutting operation, using hydraulic-plate-holding device. Starts machine and turns handwheel to force arm-mounted-cutting knives into rotating stock to cut concentric, ring-shaped sections with slanted edges. Controls pressure on cutting knives to prevent machine stalling or damage to knives. Stops machine, releases hydraulic- holding-plate, and removes rings from shaft. Stacks rings in proper sequence on table preparatory to gluing and further processing by other workers. Replaces broken knives, using key to slacken or tighten locking screw. Cleans machine, using vacuum cleaner.

8355-250 RIP-AND-GROOVE-MACHINE TENDER(furn.) DPT:685
GED: 2 SVP: 3 EC: I 7 PA: L 4 7

Tends machine that rips and cuts grooves on straight, curved or irregularly-shaped-furniture stock in one operation: Turns panel controls to adjust stops and saws for cutting grooves of specified width and depth. Feeds stock under rollers. Measures first cuts, using rule to verify processed part against work order.

8355-254 WOODENWARE CARVER, HAND(woodworking) DPT:684
GED: 2 SVP: 2 EC: I PA: M 3 4 7

Carves simple decorative design on woodenware, such as bowls and plates, using pneumatic-hand-carving tool: Selects jig according to item to be carved and bolts it to rotary spindle. Positions and secures inverted workpiece over jig, using spring-clamping device. Installs carving knife in pneumatic tool. Starts pneumatic tool and carves standard freehand design on woodenware, pressing pedal to rotate workpiece as carving progresses. Examines completed article for defects. Packs woodenware for shipment in cardboard cartons and seals containers.

8355-258 GUN-STOCK CHECKERER(woodworking) DPT:685
checkerer, small-arms.
GED: 2 SVP: 2 EC: I 7 PA: L 4 7

Tends machine that checkers (cross grooves) gunstock or handle of small-arms for decorative and gripping purposes: Positions wooden stock or forepiece in holding device on machine. Pushes buttons to cause electrically-heated, automatically-cycled dies to press checkered design in each side of workpiece. Removes workpiece from machine on completion of cycle and inspects checkering. Adjusts heat and dwell-time controls as necessary. Sands workpiece with fine sandpaper to remove irregularities.

8355-262 GUN-STOCK FITTER(woodworking) DPT:685
GED: 2 SVP: 2 EC: I 5 6 7 PA: L 4 7

Tends preset-woodworking machines to rout, drill or mill recesses in gun-stocks for parts to fit breech, barrel or trigger mechanisms of firearms: Clamps gun-stock in fixture on machine table. Starts machine and turns handwheels or pulls lever to feed workpiece into rotating tool to rout or drill recesses for trigger and breech mechanism. Turns handwheel on milling machine to cut barrel recess in fixture-mounted gun-stock. Removes gun-stock from fixture and slides it along guide on shaper to cut finger recesses. Fits metal-gun parts into their respective recesses and marks identifying number on parts and gun-stock to facilitate assembly.

8355-266 HEADING-MACHINE TENDER(woodworking) DPT:685
bottom-machine tender.
GED: 2 SVP: 2 EC: I 5 7 PA: L 4 7

Tends machine that shapes barrel, tub and bucket bottoms and headings from wooden blanks, using either of the following methods: 1. Centers and clamps heading or bottom blank between faceplates of machine, using handwheel. Moves lever to automatically feed blank into combination saw and cutter head that cuts blank to specified diameter and bevels edges. Releases clamps and removes workpiece. 2. Adjusts limit of horizontal-swing saw to shape blanks to specified size. Centers and clamps blank in machine chuck. Starts machine and moves lever that simultaneously swings rotating saw against blank and starts chuck and blank revolving. Holds saw against revolving blank to trim and shape periphery. Opens jaws of chuck and removes workpiece.

8355-270 SADDLE-MACHINE TENDER(furn.) DPT:685
chair-seat-planer tender.
GED: 2 SVP: 2 EC: I 5 7 PA: L 4 7

Tends machine that chips out saddle forms in seats of wooden chairs: Installs cams and cutter heads according to seat contour specified on work order, using screwdriver. Turns handwheels to set cutter heads for depth of cut. Starts machine and places chair seat on feed belt that pulls it into cutter heads. Removes chair seat at discharge end of machine and examines it for defects.

8355-274 WOODEN-PRODUCTS-MACHINE TENDER(woodworking) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: M 4 7

Tends one or more pre-set woodworking machines that cut, shape, smooth, bore, chop, or slice wood stock to produce items; such as, rolling pins, clothes hangers, pencils, bowls, toothpicks and basket handles, performing any combination of the following duties: Makes basic adjustments to machine table, guide fence, feed rolls, stops, jigs, or fixtures to present stock to saws, knives or cutter heads in prescribed manner, using hand tools. Pulls lever, depresses pedal, or pushes button to start machine and feeds stock into feed rolls, against guide fence and stops, or loads hopper. Stops machine to remove jams. Off-bears workpiece at discharge end of machine and inspects finished product for defects. Replaces dull or damaged blades, bits or knives. Keeps production records. May be designated according to machine tended or item produced; for example, Bowl-Lathe Tender Pencil-Grooving-Machine Tender Pencil-Rounding-Machine Tender Rolling-Pin Maker Slat Slicer Toothpick-Chopping-Machine Tender

8355-276 WOODEN-PRODUCTS-MACHINE FEEDER(woodworking) DPT:686
GED: 2 SVP: 2 EC: I 5 7 PA: L 4 7

Feeds wooden stock into preset special-purpose-woodworking machines that automatically cut, shape or finish articles; such as, threaded mop-handles, coat hangers, toothpicks, meat skewers, or clothes- pins: Loads hoppers or conveyors, or manually feeds machines to transfer stock to cutter heads, saws, or slicing knives. Stops machine and clears jams. Inspects finished products for defects. May count and pack products. May feed series of machines. May be designated according to article produced, operation performed or type of machine; for example, Automatic-Chucking-and-Threading-Machine Feeder Clothes-Pin-Machine Feeder Coat-Hanger-Shaper-Machine Feeder Handle-Threading-Machine Feeder, Automatic Skewer-Machine Feeder

8355-280 PREFITTING-MACHINE FEEDER(woodworking)
DPT:686

GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Feeds wooden doors into automatic machine that drills holes and cuts recesses for locks and hinges:
Presses buttons to start conveyor, drills and air-powered routers.
Slides door from stack and positions it against guides on conveyor.
Observes progress of door through machine to ensure that door is properly positioned on conveyor and that drills and routers are cutting cleanly. Verifies depths and locations of recesses and holes, by laying hinge or gauge in recess or by measurement. Stacks doors in designated area for further processing.
May replace dull drills or routers. May adjust position of drills and routers in machine to process doors of different sizes, using hand tools.

8355-298 WOODWORKING-MACHINE FEEDER(furn.; woodworking)
DPT:686
GED: 2 SVP: 2 EC: I 5 7 PA: M 4 7

Feeds wooden stock into rollers of machines that cut, plane, shape or smooth stock:
Feeds stock into machine or places stock on feed conveyor. Stops machine to remove jams or to make minor adjustments. Removes stock from discharge end of machine. Assists operator in setting-up machine.
May transport stock to or from machines, using handtruck or dolly. May be designated according to type of machine; for example, Groover Feeder
Moulder Feeder
Stave-Planer Feeder

8355-299 OTHER PLANING, TURNING, SHAPING AND RELATED WOOD-MACHINING OCCUPATIONS

This group includes planing, turning, shaping and related wood-machining workers, not elsewhere classified; for example those who drill air holes in shanks of smoking pipes. A typical example of an occupational title covered by this residual group definition is:
Smoking-Pipe-Air-Hole Driller(misc. prod. fab., n.e.c.)

8356-INSPECTING OCCUPATIONS, WOOD MACHINING

This unit group includes occupations in inspecting work, as described under the term title, 02-170 INSPECTOR (any ind.), concerned with quality control activities in wood machining.

8356-110 INSPECTOR, WOOD MACHINING(furn.; woodworking)
DPT:684
GED: 3 SVP: 4 EC: I PA: L 4 7

Inspects machined-wooden parts or products for conformity to specifications:
Examines items for defects, such as cracks, knots, scratches and dents. Measures items to verify specified dimensions, using gauges, templates, calipers and rules. Examines rejects to determine those that can be salvaged, and routes usable material to machine operators. Records number and type of defects, and reports recurring defects for corrective action.
May keep production records. May be designated according to part or article inspected or machining operation involved; for example, Pattern Inspector(woodworking)
Sanding Inspector
Shuttle Inspector(woodworking)

8356-199 OTHER INSPECTING OCCUPATIONS, WOOD MACHINING

This group includes wood-machining inspectors, not elsewhere classified; for example, those who measure and inspect wooden parts or products for conformance to specifications. Typical examples of occupational titles covered by this residual group definition are:
Door-Mortising-and-Boring Inspector(woodworking)
Gun-Stock Inspector(metal fab., n.e.c.)

Wooden-Bowl Inspector(woodworking)

8357-WOOD SANDING OCCUPATIONS

This unit group includes occupations concerned with operating, tending and feeding sanding machines to smooth and clean wood parts or products. Occupations concerned with sanding veneer and plywood panels in a plywood plant are classified in Unit Group 8233, PLYWOOD MAKING AND RELATED OCCUPATIONS.

8357-110 CONTOUR-SANDER OPERATOR(woodworking)
DPT:684
GED: 3 SVP: 4 EC: I 5 7 PA: M 4 7

Operates belt-sanding machine to sand mouldings or other contoured wood surfaces:
Adjusts tension of sanding belt, using handwheel. Starts machine, and regulates speed of belt. Places stock to be sanded on bed of machine and selects sanding form according to shape of contour required. Forces belt manually against surface of stock, using sanding form to mould belt to contour of workpiece. Moves form along belt to smooth entire surface of material. Examines and feels surface for acceptable finish. Replaces worn sanding belts.
May complete work order cards or production reports. May operate belt-sanding machine on which sanding form is clamped to pressure bar and stock conveyed under belt, or operate machine which has power-oscillated pressure bar or shoe.

8357-114 TURNING-SANDER TENDER(furn.; woodworking)
DPT:685
GED: 3 SVP: 3 EC: I 5 7 PA: L 4 7

Tends sanding machine that sands turned items, such as spindles, chair rungs and bed posts, by rotating them against strips of sandpaper:
Turns handwheel to space chucks of machine according to length of stock. Cuts strips of sandpaper according to shape of article and clamps strips in position on machine. Starts machine and places stock on feed rest where it is picked up by rotating spindles, or positions stock between chucks, manually. Observes and feels sanded stock to verify smoothness.
May keep production records.

8357-118 SANDER, MACHINE(furn.; misc. prod. fab., n.e.c.; woodworking)
DPT:684
GED: 2 SVP: 3 EC: I 5 6 7 PA: L 4 7

Sands surface of wooden items or parts by moving them against power-driven abrasive belts, disks, drums or spindles, using either of the following methods:
1. Shapes and smooths item by holding and turning it against abrasive. 2. Adjusts table height or angle, places item on table or in jig, and pushes item against moving abrasive form. Observes and feels surface of stock for smoothness. Replaces worn sanding material. May fit sanding belt, drum, disk or spindle according to shape of article to be sanded. May fill cracked surfaces of item with putty or other compound. May be designated according to type of machine operated or item produced; for example, Drum Sander
Last Sander(misc. prod. fab., n.e.c.)
Smoking-Pipe Sander(misc. prod. fab., n.e.c.)

8357-122 LATHE SANDER(furn.; misc. prod. fab., n.e.c.; woodworking)
DPT:684
GED: 2 SVP: 2 EC: I 5 6 PA: M 4 7

Removes tool marks and smooths round wooden parts by hand-sanding parts rotated on lathe:
Positions part between headstock and tailstock of lathe, and closes tailstock against part to hold it in place. Starts machine and presses sandpaper of specified grade over rotating part. Examines or feels part to ascertain whether surface is smooth. Removes part from lathe. May apply wax or other finish while part is rotating on lathe.

8357-126 SANDER, PORTABLE MACHINE(furn.;
woodworking) DPT:684
clean-up man.
GED: 2 SVP: 2 EC: I 5 7 PA: M 3 4 7

Sands surface of wood articles to facilitate finishing, using portable sander:
Attaches sheet or disk of abrasive material to machine platen and secures it with thumbscrews or clamps. Starts machine and guides it over surface by hand. Examines and feels surface for smoothness. Removes excess glue from joints, using knife, scraper, or wood chisel. Fills cracks, splits and knotholes with wood putty or plastic wood. Sands wood surface by hand, when shape of workpiece precludes use of sanding machine.

8357-130 CYLINDER-SANDER FEEDER(furn.; woodworking)
DPT:686
GED: 2 SVP: 2 EC: I 5 7 PA: L 4 7

Feeds sanding machine, that sands cylindrical-wooden stock:
Starts machine and inserts article between abrasive belt and feed roller through collar or guide, or places article on conveyor that carries it between feed roller and sanding belts. Observes and feels stock emerging from machine to verify smoothness.
May adjust tension of abrasive belt by turning set screw. May replace worn sanding belts. May mount collar or guide, according to size of stock, using hand tools. May record number of pieces sanded.

8357-134 SANDING-MACHINE FEEDER(woodworking)
DPT:686
GED: 2 SVP: 2 EC: I 5 PA: M 3 4 7

Feeds flat-wood workpieces into sanding machine to obtain smooth surface:
Turns handwheel or moves lever to adjust clearance between sanding belt or drum and feed bed to obtain desired thickness of workpiece. Starts machine, and lifts and feeds stock onto endless belt or feed rollers. Checks workpiece periodically to verify thickness, using thickness gauge or calipers. Inspects product for smoothness, using fingers, as it emerges from machine.
May replace worn or torn sandpaper or sanding belts, using hand tools.

8359-WOOD MACHINING OCCUPATIONS, N.E.C.

This unit group includes wood machining occupations, not elsewhere classified, concerned with activities, such as framing timbers and poles, sawing and shaping wooden paddles, shaping and finishing wooden or plastic shuttles, laying out cutting lines on wood stock, mitring and cutting moulding stock, cutting and waxing cork bottle-cap liners and cutting and pointing wooden dowels.

8359-110 FRAME-TABLE OPERATOR(woodworking)
DPT:662
framer.
GED: 3 SVP: 5 EC: O 5 PA: M 3 4 7

Operates machines to cut, drill, incise, and assemble timbers for utility poles, and for structures, such as buildings, bridges, and piers, performing any combination of the following duties:
Lays out timber for cutting operations, according to drawings or work order, using square, rule and pencil, and assisted by co-worker. Installs dado cutters or adzing knives. Adjusts cutters for depth and angle of cut by raising, lowering, or tilting it with aid of electric motor. Directs co-worker to spot lumber on carriage under cutting tool. Starts machine and advances cutter into wood by turning wheel or pressing

pedal. Bores and countersinks holes in timber, using drill press or portable drill. Changes or sharpens cutters or drill bits, using hand tools. Sets up and operates incising machine to slit surface of timber to aid the penetration of preservative fluids. Operates circular saw to cut timber to specified length. Marks identifying data on finished pieces, using die-filled hammer or crayon. Repairs and lubricates machines. May specialize in framing particular items and be designated accordingly,

Timber Framer

8359-114 OAR MAKER(woodworking) DPT:681
paddle maker.
GED: 3 SVP: 3 EC: I 5 6 7 PA: M 4 7

Sets up and operates variety of woodworking machines to saw, taper, shape and finish wooden oars or paddles according to specifications:
Selects template and lays out patterns on rough stock, using pencil, to obtain most effective use of material and to avoid defects. Cuts out workpiece by guiding wood stock against band-saw or jigsaw and following pattern outline. Shapes blade of oar, using table saw. Shapes shaft and handle of oar with wood-turning lathe. Sets up and operates planing machine to taper paddle blade to specifications. Selects and installs cutting heads in multiple-spindle-shaping machine. Starts machine and holds and pushes paddle stock against cutting heads to obtain desired shape. Smooths surface of oar or paddle by holding and turning against abrasive surfaces of sanding machine.
May glue pieces of different wood species together to form stock for making fancy paddles.

8359-118 SHUTTLE-SHAPER-AND-TIP INSERTER
(woodworking) DPT:682
GED: 3 SVP: 3 EC: I 5 6 PA: L 4

Operates variety of machines to shape and assemble wooden or plastic shuttles:
Feeds shuttle blanks into cutting, profiling, filing, grooving, and corrugating machines to shape shuttles, including bobbin chamber, using levers and guide fence. Saws and squares ends of shuttles, using circular saw and rotating-cutting machine. Bores holes in shuttle to permit insertion of ferrule and metal tips, using boring machine. Inserts ferrule in shuttle, using ferrule-inserting machine. Dips corrugated shaft of metal tip in glue, sets shaft in hole, and forces tip into hole, using electro-magnetic, arbor, or other type of press.

8359-122 SHUTTLE FINISHER(woodworking) DPT:684
GED: 3 SVP: 3 EC: I PA: L 4 7

Smooths and finishes shuttle grooves, inserts tension devices, and lacquers wooden shuttles:
Bores holes in shuttles for tension devices, using boring machine. Inserts tension devices through holes and secures them with glue. Removes rough spots from shuttle grooves, using knife, chisel and file, and polishes surface of shuttle with sandpaper and emery-cloth. Removes dust from shuttles, using air hose, and places shuttles in dipping rack. Lowers rack into lacquer tank to coat shuttles with lacquer, and raises rack to allow shuttles to dry. Removes flaws in lacquer finish, using buffing wheel, sandpaper and steel wool. Sharpens knives and chisels, using hand oilstone.

8359-126 LAY-OUT MAN(woodworking) DPT:684
pattern marker.
GED: 2 SVP: 3 EC: I PA: L 4 7

Marks cutting guidelines on wood stock for woodworking-machine operators:
Selects pattern according to part being processed and aligns pattern on stock. Marks or traces outline of irregularly-shaped parts on wood stock or partly-finished-wooden products, using pencil or other marking device.
May nail pieces of thin stock together for identical parts to be cut

simultaneously. May be designated according to machine supplied or product; for example,
Band-Saw Marker
Last Marker

8359-130 MOULDING CUTTER(woodworking) DPT:684
GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Cuts and mitres moulding stock for picture frames and doors, performing any combination of the following duties:
Turns screws to adjust feed guides and end stop to cut moulding to specified angle and length. Turns handwheel to raise or lower mitre bars that protect edges of moulding from splintering during cutting operation. Slides stock under knife and depresses pedal or pulls hand lever to lower cutting knife that cuts and mitres moulding. Traces outline for decorative or irregular-shaped moulding, using template and pencil, and cuts moulding following outline, using band- saw. Makes several cuts with mitre knife or pushes moulding through band-saw or pre-adjusted mitre saw when stock is too thick for one cut of knife.

8359-134 POLE FRAMER(construction) DPT:684
line and frame poleman.
GED: 2 SVP: 3 EC: O 6 PA: VH 2 3 4 7

Shapes pole ends, bores bolt holes, and cuts crossarm and step notches in wooden poles for telephone, telegraph and electric-power transmission lines:

Cuts pole to specified length, using chain saw. Sights down pole to determine straightest side so that poles will line up evenly when erected. Rotates curved pole until curved side is down, using peavey. Measures and marks cutting points on pole, using steel tape and chalk. Cuts tip of pole to point, using chain saw. Cuts notches for crossarms, using hand saw, chisel and hammer. Drills holes in pole for support bolts and step sockets, using air powered or electric drill. Brands pole, using gas heated iron, to burn identifying information into poles.

8359-138 BOTTLE-CAP-LINER CUTTER(woodworking) DPT:685

disk cutter.

GED: 2 SVP: 2 EC: I PA: M 4

Tends machines that slice cork rods into bottle-cap liners and spray liners with wax:

Feeds cork rods into automatic machine that slices rods into disks of specified thickness for use as cap liners. Inspects disks for defects, such as chips or rough edges. Pours powdered wax into hot- water-heated drum to melt wax. Tends machine that sprays liners with hot-liquid wax.

May sharpen or change knives, using hand tools.

8359-142 DOWEL POINTER(furn.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that cuts and points wooden dowels:

Selects guide sockets according to diameter of stock and secures them in automatic-feed head with thumbscrews. Adjusts saws that cut dowel to length. Starts machine, and inserts dowel rods in guide sockets to be cut and pointed.

May sort and stack finished dowels in rack.

8359-199 OTHER WOOD MACHINING OCCUPATIONS

This group includes wood machining workers, not elsewhere classified; for example, those who operate punch presses to cut notches in wood stock, and select wood stock from stockpile according to production specifications. Typical examples of occupational titles covered by this residual group definition are:

Notching-Machine Operator(woodworking)

Stock Picker(woodworking)

837-CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS

This minor group includes occupations concerned with shaping clay, glass and stone into parts or products through machining to specified dimensions by such means as cutting, boring, abrading, milling and planing. Activities include: measuring, laying out, and setting up work pieces and machines. Includes machining of related materials, when methods applied to machining of clay, glass and stone are employed. Occupations in this minor group are classified in the following unit groups:

- 8370 Foremen: Clay, Glass, Stone and Related Materials Machining Occupations**
- 8371 Cutting and Shaping Occupations: Clay, Glass, Stone and Related Materials**
- 8373 Abrading and Polishing Occupations: Clay, Glass, Stone and Related Materials**
- 8376 Inspecting Occupations: Clay, Glass, Stone and Related Materials Machining**
- 8379 Clay, Glass, Stone and Related Materials Machining Occupations, n.e.c.**

8370-FOREMEN: CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in machining clay, glass, stone and related materials into parts or products.

8370-110 FOREMAN, ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in operating and tending machines that grind and polish stone, cement, abrasives and clay materials; grind and polish flat glass and glassware; and grind, polish and coat optical elements, such as lenses, reflectors, filters and prisms. (Unit Group 8373):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Contact Lenses (scient. & ind. equip., n.e.c.)
Foreman, Glass Grinders and Polishers(glass)
Foreman, Lens Grinders and Polishers (scient. & ind. equip., n.e.c.)
Foreman, Stone Polishers(cement, stone & clay)
Foreman, Ware Dressers(cement, stone & clay)

8370-114 FOREMAN, CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in operating and tending machines that cut, drill, plane, bore and shape clay, glass, stone and related materials to specified dimensions, (Unit Group 8371):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Stone Carvers(cement, stone & clay)
Foreman, Stone Cutters(cement, stone & clay)
Glass-Cutting Foreman(glass)

8370-199 OTHER FOREMEN, CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS

This group includes foremen clay, glass, stone and related materials machining occupations, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in blocking lenses for grinding, making mirrors and cutting and grinding slate. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Lens Blockers(scient. & ind. equip., n.e.c.)
Foreman, Mirror Makers(glass)
Foreman, Slate Cutters and Grinders(cement, stone & clay)

8371-CUTTING AND SHAPING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIAL

This unit group includes occupations primarily concerned with operating and tending machines that cut, drill, plane, bore and shape clay, glass, stone and related materials to specified dimensions. Includes activities such as, cutting, shaping and drilling which are done manually, using hand tools, drills and chisels.

Stone, Cement, Abrasives and Clay Cutting and Shaping Occupations

8371-110 through 8371-170

8371-110 STONE CARVER(cement, stone & clay) DPT:281 GED: 4 SVP: 7 EC: I 5 PA: M 4 7

Carves designs and figures in stone, employing sense of artistry and knowledge of stone-carving techniques:

Studies objects or graphic material to visualize finished product and plan method and sequence of carving. Lays out figures or designs on stone surface by marking over tracing paper or by transferring dimensions from sketches or drawings, using rule, straightedge, square, compass, calipers, chalk and scribe. Selects chisels and pneumatic tools required, according to intricacy of design or figure. Roughs out design freehand or by chipping along marks on stone surface, using mallet and chisels or pneumatic tool. Shapes or trims roughed-out design with appropriate tool to complete carving. Compares carving with drawing or model during carving process. Verifies dimensions of carving, using calipers, rule, straightedge and square. Feels carving to verify smoothness of finish.

May smooth and polish surface of carving or monument, using rubbing stone or portable electric grinder.

8371-114 MACHINE OPERATOR, CEMENT PIPE (cement, stone & clay) DPT:682 GED: 3 SVP: 6 EC: I 5 7 PA: H 4 7

Operates a variety of lathes, drills, and boring mills to shape cured and uncured asbestos-cement pipe and fittings:

Reads work order to ascertain product specifications. Lifts items onto machine manually or using hoist. Positions item in machine, using expanding arbors, air chucks, centers and fixtures. Machines item to specifications, using manual, automatic or hydraulic tool feed. Adjusts machine speed or tool feed to minimize chatter. Adjusts tool position to correct dimensional errors. Removes tool marks on rotating item manually, using abrasive paper. Inspects item to verify conformance to specifications, using fixed gauges, calipers and scale, and rejects defective items.

May be designated according to type of machine operated; for example,

Boring-Mill Operator
Fitting-Lathe Operator
Monolithic-Lathe Operator
Radial-Drill Operator
Taper-Lathe Operator

8371-118 STONECUTTER, HAND(cement, stone & clay) DPT:381 GED: 3 SVP: 5 EC: I 5 7 PA: VH 4 7

Cuts, shapes and finishes rough stone to specifications, using hand or pneumatic tools:

Positions stone for marking and cutting, using hoist or rollers and pry. Traces around patterns or transcribes dimensions from drawings to stone, using rule, straightedge, square and chalk or scribe. Selects cutting tool according to finish specified or step in finishing process. Chips away fragments of stone along cutting mark to produce required finish, dimension or shape, using hammer and chisel or pneumatic chisel. Verifies progress of work and adherence to specifications, using pattern or straightedge, level, plumb and square. May drill holes in stone using portable drill or drilling machine. May be designated according to type of stone or product cut; for example,
Granite Cutter
Marble Cutter
Slate Cutter
Stonecutter, Building
Stonecutter, Monument

8371-122 GRINDING-STONE SHARPENER(cement, stone & clay) DPT:662 GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Operates stone-dressing lathe to sharpen and dress grindstones that grind logs into pulp:

Observes grinders, examines pulp for length and thickness of fibre or reads laboratory reports on pulp consistency to determine need for sharpening grindstone. Selects and installs sharpening burr in stone-dressing lathe, using wrench. Moves controls or signals other worker to move controls to feed burr against revolving stone to dress and sharpen stone.

8371-126 STONE SAWYER(cement, stone & clay; non-metal. min. prod., n.e.c.) DPT:662 GED: 3 SVP: 5 EC: I 5 7 PA: H 2 4 7

Operates single- or multiple-blade saw to cut stone, cement or similar material to specified dimensions:

Signals crane operator to lift and position stone on machine or timber bed or positions and levels stone, using hoist, crowbar, wedges, blocks, rule and spirit level. Marks dimensions on stone according to specifications, using rule, straightedge, square, crayon, chalk- line and scribe. Selects and fits saw blades and spacers. Aligns saw with cutting marks. Turns valves to circulate water and abrasive against saw blades. Starts machine, observes meter and adjusts controls to regulate pressure of saw on stock, machine speed and depth of cut. Verifies dimensions of cut stock, using rule. Washes stone with water hose. Replaces worn blades, using hand tools.

May be designated according to type of saw operated or item produced; for example,

Carbon Cutter(non-metal. min. prod., n.e.c.)
Circular Sawyer, Stone(cement, stone & clay)
Gang Sawyer(cement, stone & clay)
Ripsawyer, Stone(cement, stone & clay)

8371-130 GREENWARE TURNER(cement, stone & clay; non-metal. min. prod., n.e.c.) DPT:682
clay turner.
GED: 3 SVP: 5 EC: I 4 7 PA: H 4 7

Operates vertical or horizontal lathe to cut and shape green (unfired) clayware or similar material to manufacture items, such as insulators and abrasive wheels:

Reads work order or studies drawing to ascertain specifications. Selects hand tools or selects and mounts machine tools, according to specifications. Positions and centers greenware on vertical lathe or mounts ware between spur chuck and tail stock on horizontal lathe. Starts machine and guides tool against revolving ware to produce specified shape or size. Turns workpiece over to shape both sides of wheel. Verifies accuracy of shape and dimensions, using scale, calipers and templates.

May smooth surface, using sandpaper or wet sponge. May be designated according to products machines; for example, Abrasive-Wheel Shaper(non-metal. min. prod., n.e.c.) Insulator Shaper(cement, stone & clay)

8371-134 GRINDING-WHEEL DRESSER(non-metal. min. prod., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I 5 7 PA: H 4 7

Operates machine to dress grinding wheels to specified dimensions, shape and surface finish:

Positions and secures grinding wheel in machine chuck or on spindle, using hand tools. Mounts dressing tool in machine holder. Moves levers, turns handwheel or manually positions drive belt on step pulley to adjust speed of machine. Starts machine and turns handwheels to force cutting tool against grinding wheel to obtain specified shape or finish. Verifies dimensions and smoothness of wheel, using rule, calipers, micrometer and templates.

May hold cutting tool on tool rest and press against grinding wheel to shape or surface wheel to specifications.

8371-138 STONE PLANER(cement, stone & clay) DPT:682
GED: 3 SVP: 5 EC: I 5 6 7 PA: H 4 7

Operates machine to shape, smooth and square surface of stone blocks and slabs:

Positions stone on machine bed, using hoist. Secures stone with clamps. Measures and marks stone, using pattern, tape measure and marking pencil. Installs and adjusts cutting tool in machine chuck with wrench. Starts machine, pulls levers and turns handwheels to regulate cutting speed and depth of cut. Smooths edges, or cuts specified design in portion of stone that cannot be cut by machine, using hammer, chisels, file and pneumatic-cutting tool.

May shape and sharpen cutting tools according to specifications, using grindstone. May replace worn or broken parts and lubricate machine, using hand tools and oil can.

8371-142 WIRE-SAW OPERATOR(cement, stone & clay) DPT:682
GED: 3 SVP: 5 EC: I 4 5 PA: M 3 4 7

Operates one or more wire saws to cut blocks of stone to specified dimensions:

Places supporting timbers on machine bed preparatory to positioning stone. Operates forklift to lift and position stone on supporting timbers. Levels stone on timber bed, using crowbar, wedges, blocks, rule and spirit level. Marks dimensions on stone according to specifications, using rule, square, straightedge and chalk line. Presses button to lower and align wire with mark on stone. Positions abrasive supply hose and starts saw and pump that circulates abrasive and water under moving wire. Observes machine operation to detect uneven sawing. Adjusts pulleys that increase tension on wire to restore even sawing. Dumps abrasive into hopper to maintain supply. Verifies width or thickness of cut stone, using rule. Replaces worn wire by threading new wire through pulleys and splicing ends together, using hand tools and electric welder.

May operate saw with more than one wire.

8371-146 GREENWARE DRILLER(cement, stone & clay) DPT:682
clayware driller.
GED: 3 SVP: 4 EC: I 7 PA: VH 4 7

Operates vertical-or horizontal-spindle-boring machine to drill holes in green (unfired) clay products:

Reads work orders and studies drawings to ascertain specifications. Selects boring tools and accessories and installs them in machine, and adjusts spindle stop to regulate depth of bore, using rule and wrench. Places stock on machine table or in vee forms and starts machine. Moves lever to force item against rotating bit. Verifies size, location and depth of hole, using rule and template.

8371-150 STONE DRILLER(cement, stone & clay) DPT:682
GED: 3 SVP: 3 EC: I 5 PA: H 4

Operates machine to drill holes in blocks or slabs of stone according to specifications:

Positions and secures stone on machine bed, using hoist, wedges and wooden blocks. Measures and marks stone for drilling, using rule and marker. Selects and installs bit in drill and starts machine. Pulls levers and turns wheels to regulate speed of machine, flow of water and depth of hole cut.

May drill holes in stone, using pneumatic-hand drill.

8371-154 MILLSTONE CUTTER(non-metal. min. prod., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I 5 7 PA: H 4

Sharpens millstones in grain-grinding mill, using pneumatic chisel: Removes bolts holding stone in mill, using wrench. Places stone on workbench, using hoist. Brushes face of stone with broom. Recuts floors (grooves) in stone following original indentations, using pneumatic chisel. Brushes chips from stone. Replaces stone in mill, using hoist and wrench.

8371-158 CONCRETE-SAW TENDER(cement, stone & clay) DPT:665
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Tends automatic machine that saws concrete slabs to specified length: Signals crane operator to position machine over slab. Connects electric-power cord and cooling water hose to respective supplies. Turns valve to start water flow to machine. Depresses buttons to position saw blade on cutting mark, adjust cutting depth and start automatic-cutting operation. Observes sawing operation to ensure that saw is following cutting line and that material is cut to prescribed depth. Signals crane operator to move machine to next slab on completion of cut. Cleans, lubricates and makes minor repairs to machine, using hand tools and lubricating equipment.

8371-162 STONE SPLITTER, HAND(cement, stone & clay) DPT:684
rock splitter; slate splitter.
GED: 2 SVP: 2 EC: B 6 PA: H 4 7

Splits rough or large stones into smaller sizes, using hand tools: Examines stone to determine rift, grain or cleavage lines. Positions chisel on selected line. Strikes chisel with mallet or hammer to split stone. Loads cut stone on pallet or moves stone from work area. May chip rough edges from stone, using hand tools.

8371-166 CARBON-PLANER TENDER(non-metal. min. prod., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: M 4 7

Tends planing machine that smooths flat surfaces of graphite-slab stock to specified thickness and width for use as anodes in electrical equipment:

Starts machine and pushes stock along roller conveyor to cutting heads that plane top, bottom and sides of slab. Observes planing operation to detect machine malfunction. Gauges planed stock and adjusts machine cutters to maintain desired thickness, using dial- micrometer gauge and hand tools.

8371-170 STONE-SPLITTER TENDER(cement, stone & clay) DPT:685

GED: 2 SVP: 2 EC: 1 PA: H 4

Tends hydraulic machine that splits stone slabs for further processing: Moves lever to raise conveyor turntable containing stone slab. Rotates slab manually to measure rough block and mark stone where split is to be made, using chalk, rule and string. Positions stone under blade manually, using rollers and crowbar. Manipulates lever to lower blade against stone, and raise wedges mounted on pressure head. Observes gauge and moves lever to increase pressure of cutter head that splits stone into specified dimensions. Moves lever to raise blade and lower pressure head. Pushes stone over rollers to next work station. May tend pedal-controlled machine that splits concrete blocks to produce imitation ashlar.

Glass Cutting and Shaping Occupations

8371-190 through 8371-210

8371-190 GLASS-CUT-OFF-MACHINE OPERATOR(glass) DPT:682

GED: 3 SVP: 4 EC: 1 PA: L 4 7

Operates automatic machine to cap (score and break off) flat glass to specified dimensions: Positions trip switches on machine to control stroke of cutting bridge. Sets electronic control or manually adjusts cutting head on bridge to score glass to specified dimensions. Turns screw to set scoring depth. Sets snap-bar mechanism that breaks glass along scored line. Starts and adjusts vacuum lifter that lays glass on machine conveyor. Starts machine and synchronizes conveyor speed with machine functions. Examines glass for irregular or rough breaks and adjusts machine to correct cap-off defects. Verifies dimensions of glass with rule or graduated bar. Replaces dull cutters, using hand tools. May operate machine that automatically stacks cut sheets of glass on designated tables.

8371-194 GLASS-LATHE OPERATOR(electronic equip.) DPT:682

GED: 2 SVP: 3 EC: 1 6 PA: M 4 7

Operates glass lathe to cut and seal sections of television-picture tubes: Stamps identification mark on neck of bulb. Places neck in tailstock of lathe. Mounts and aligns bulb in lathe chuck. Measures and marks required length on neck. Starts lathe. Lights and regulates flames of gas-torch heater according to requirements. Heats glass to working temperature observing colour of glass. Cuts neck to length, using oxygen burner. Stops lathe. Aligns and butts neck against bulb. Starts lathe and fuses neck to bulb, using torch. Places tube in annealing oven or anneals tube, using torch.

8371-198 GLASS CUTTER, HAND(glass) DPT:664

GED: 2 SVP: 3 EC: 1 PA: M 4 7

Cuts glass sheets by hand to obtain sections of prescribed dimensions or shape or to remove blemishes: Lays sheet of glass on padded table or in jig. Places pattern on or under glass, or measures and marks glass for cutting. Examines and marks defective glass to obtain best cut. Scores glass surface around pattern or along straight-edge, using cutting tool. Breaks off required sheet or excess glass with notched tool or glass pliers, or directs other workers to break glass. May smooth rough edges, using belt sander or smoothing wheel.

8371-202 GLASS-CUTTER OPERATOR(glass) DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4 7

Cuts sheet glass into oval or circular shapes, using cutting table equipped with manually-guided-cutting tool suspended above surface of glass: Places glass on cutting-machine table. Adjusts cutter to produce specified shape. Guides cutting tool over glass to score and cut surface. May strip (break off) excess glass. May remove rough edges of glass, using belt sander.

8371-206 GLASS-DRILL TENDER(glass) DPT:685

GED: 2 SVP: 2 EC: 1 PA: M 4

Tends machine that drills holes in flat glass: Positions glass in preset jig or on table beneath drill. Starts drill and pulls lever to force rotating bit through glass. Raises bit and removes glass. May tend machine that automatically cycles (starts, lowers, raises and stops) drill when button is pressed. May clean glass, using cloth or by placing glass in machine washer.

8371-210 GLASS-CUTTER HELPER(glass) DPT:687

GED: 2 SVP: 2 EC: 1 PA: H 4

Helps glass cutter to cut and handle glass, performing any combination of the following duties: Carries glass to and from work table. Places cutting tools on table. Breaks excess glass from stock along lines cut by glass cutter, using notched tool or pliers. Removes excess glass from work area. Packs glass in cartons. See also definition for term title, 02-160 HELPER (any ind.).

8373-ABRADING AND POLISHING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS

This unit group includes occupations concerned with operating and tending a variety of machines that grind and polish stone, cement, abrasives and clay materials; grind and polish flat glass and glassware; and grind, polish and coat optical elements, such as lenses, reflectors, filters and prisms. Dispensing opticians are classified in Unit Group 3154, DISPENSING OPTICIANS. Occupations concerned with cutting and shaping plastic contact lenses by machining are classified in Unit Group 8319, METAL MACHINING OCCUPATIONS, N.E.C.

Stone, Cement, Abrasives and Clay Abrading and Polishing Occupations 8373-110 through 8373-142

8373-110 SURFACE-PLATE FINISHER(cement, stone & clay) DPT:381

GED: 4 SVP: 7 EC: 1 PA: M 3 4 7

Laps (smooths) granite-block surface to specified tolerance for use as surface plate: Positions stone on base, using hoist. Aligns and levels stone with arm of lapping machine, using wedges and screw adjustments on base. Moves straightedge over stone surface to detect uneven areas. Wets stone surface with water and applies abrasive. Selects lapping block according to uniformity of stone surface or step in finishing process. Lifts block onto stone, using hoist, and secures block to arm of lapping machine with wrench. Starts machine and presses buttons to guide spinning block over stone surface. Laps surface manually to obtain fine tolerance. Examines surface with collimator to ensure conformance to specifications. Prepares graph of collimator readings to indicate tolerance deviation at any point. Operates diamond drill to bore adapter holes in plate to facilitate attachment of measuring instruments. Cements tapped-metal inserts in holes. May specialize in hand lapping rough-lapped stones. May lap metal-precision surfaces, such as straightedges, or angle, bench and lapping plates.

8373-114 STONE POLISHER, MACHINE(cement, stone & clay) DPT:682

GED: 3 SVP: 6 EC: 1 4 5 PA: H 3 4 7

Operates machine to grind and polish surface of stone to smooth and lustrous finish: Places, aligns and levels stone or slab on machine bed. Selects grinding or polishing wheel or type of abrasive, according to type of stone, finish specified or step in finishing process. Attaches wheel to machine spindle, using latch or hand tools. Turns valves to circulate, or manually spreads abrasives and water on surface of stone. Starts

machine and guides rotating wheel over surface of stone. Observes level gauge or puddles of water on stone to detect uneven areas. Observes ammeter to determine grinding pressure and move levers to adjust wheel pressure or speed. Washes stone, using hose or wet sponge and changes wheel as grinding or polishing progresses to specifications.

May be designated according to type of stone surfaced; for example, Granite Polisher, Machine
Marble Polisher, Machine

8373-118 STONE POLISHER, HAND(cement, stone & clay) DPT:684

GED: 3 SVP: 6 EC: I 5 7 PA: H 3 4 7

Grinds and polishes surface of stone to smooth and lustrous finish, using portable grinding and polishing machine:

Positions and secures stone on work table, using hoist and clamps. Selects abrasive wheel according to type of stone, finish specified or step in finishing process. Attaches wheel to portable machine, using wrench. Wets stone surface, using hose. Starts machine and guides rotating wheel over stone in circular motion to smooth surface. Washes grit from stone, using hose or wet sponge. Feels stone surface to detect uneven areas, rough spots, cracks and scratches. Removes grinding wheel and attaches buffing wheel to machine. Charges wheel with polishing compound. Starts machine and guides wheel over stone to polish surface. Hand rubs stone surfaces that cannot be finished by machine, using abrasive blocks or buffing cloth. Mixes colouring compound and wax to match colour of stone and fills surface cracks or imperfections, using putty knife.

May be designated according to type of stone polished; for example, Granite Polisher, Hand
Marble Polisher, Hand

8373-122 CONTOUR GRINDER, MACHINE(cement, stone & clay) DPT:682

GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Operates machine to grind building or monumental stone to specified shape or design:

Positions and secures stone on machine bed, using hoist, hand tools, wedges and clamps. Measures and marks shape or design on stone, using template or drawing, tape measure and marking pencil. Selects, installs and adjusts grinding wheel in machine, using hand tools. Turns valve to start flow of water onto grinding wheel. Starts machine, moves levers and turns handwheels to regulate speed of cutting wheel, depth of cut, and to move wheel onto stone or machine bed and stone under cutting wheel. Repositions stone on machine bed as necessary to obtain specified pattern or design. Compares cut made on stone with template or design to assure adherence to specifications. Shapes, sharpens or dresses grinding wheels to specifications. Lubricates and makes minor repairs to machine.

May cut specified designs in portions of stone that cannot be cut by machine, using hammer and chisel or pneumatic chisel.

8373-126 SANDBLASTER, STONE(cement, stone & clay) DPT:684

GED: 3 SVP: 4 EC: I 6 7 PA: H 4 7

Operates sandblasting equipment to cut inscriptions or decorative designs in monumental stone:

Dumps abrasive into mixing chamber of sandblasting equipment and turns valve to admit compressed air into mixing chamber. Selects and attaches sandblasting nozzle to supply hose. Turns valve to adjust jet of abrasive from nozzle. Cuts inscription or design in stone, using sandblasting nozzle and following stencil outline. Measures or estimates depth of cut, using rule or by utilizing knowledge of sandblasting operations. Removes or adds parts of stencil as required to create differences in depth of cuts.

May cut stencils to be used in sandblasting operation. May sandblast stone without aid of stencil to produce rough, pitted finish.

8373-130 STONE-GRINDER TENDER(cement, stone & clay) DPT:685

bed rubber.

GED: 3 SVP: 4 EC: I 4 5 6 7 PA: H 4

Tends machine that grinds rough-sawn-stone blocks or slabs to specified finish or thickness:

Positions and clamps stone in machine with designated surface resting on circular-metal plate, using hoist and side-vise clamps. Shovels abrasive, such as grit, sand and steel shot, into machine hopper. Starts machine, turns valve, moves handle and sets dial to control flow of water and abrasive between stone surface and rotating-metal plate. Verifies thickness of stone with gauge. Removes finished stone from rubbing bed and cleans abrasive from surface of stone, using scraper, brush, sponge and water hose.

8373-134 STONE BEVELER(cement, stone & clay) DPT:684

GED: 2 SVP: 4 EC: I 5 7 PA: VH 4 7

Bevels and smooths edges of stone, using hand tools:

Positions slab on work bench, using hoist and clamps. Marks width of specified bevel on slab edges, using rule, straightedge, square and scribe. Removes excess material along edge to produce bevel angle, using rasp. Smooths beveled edges, using fine file and sandpaper. Feels beveled edge to determine smoothness.

May use hammer and chisel or pneumatic chisel to remove excess material when cutting large bevels. May place finished slab on truck, using hoist.

8373-138 WARE DRESSER(cement, stone & clay) DPT:684

GED: 3 SVP: 3 EC: I PA: M 4 7

Dresses glazed and decorated ware and sorts ware into standard or unacceptable grades:

Chips pin marks or cement from ware, using dressing iron, chisel or blade, exerting sufficient pressure to remove defect without damaging surrounding glaze. Grinds down dressed spots and other defects, such as glaze droplets, tar, paint, kiln dirt and colour spots, using sanding belt or steel wool and turpentine. Separates items into various grades according to number and type of defects, and discards unusable products.

May test randomly-selected items in tensile-testing machine.

8373-142 ABRASIVE-WHEEL GRINDER(cement, stone & clay) DPT:685

diamond-wheel finisher.

GED: 3 SVP: 3 EC: I PA: H 4 7

Tends machine that grinds abrasive wheels to specified dimensions:

Studies drawing or reads work order to ascertain specifications. Sets machine head to control feed angle of abrasive wheel to grinding wheel. Positions and secures abrasive wheel in chuck or on arbor manually, or using hoist. Starts machine and feeds abrasive wheel into grinding wheel manually, or starts machine that automatically feeds abrasive wheel into grinding wheel. Inspects abrasive wheel for conformance to specifications, using fixed gauge, calipers, scale, template and micrometer.

Flat Glass and Glassware Abrading and Polishing Occupations 8373-162 through 8373-190

8373-162 GROOVE GRINDER(glass) DPT:682

GED: 3 SVP: 3 EC: I PA: M 4 7

Operates machine to grind mitred or rectangular grooves in flat-glass articles:

Selects and installs grinding wheels according to specifications. Adjusts and secures guide rails and stops. Turns handwheel to adjust depth of cut or pressure of grinding wheel on workpiece. Positions glass under grinding wheel and against guide or stop. Turns valve to start flow of coolant against grinding wheel. Pushes lever or depresses pedal to force grinding wheel against surface of glass, or pushes lever to move machine table and glass under grinding wheel. Observes grinding process and feels cut to determine that groove is cut to specified depth. May dress grinding wheels.

8373-166 EDGE FINISHER, HAND(glass) DPT:684

GED: 3 SVP: 3 EC: I PA: M 4 7

Bevels or smooths edges of mirrors or other flat-glass items, using grinding wheels or abrasive belts:

Selects and installs grinding wheel or abrasive belt in accordance with required finish. Turns valve to start flow of coolant or abrasive onto wheel or belt or starts exhaust on dry-belt machine. Starts machine.

Holds and turns item against abrasive wheel or belt to obtain desired bevel or finish. Examines or feels edge of glass to determine correct bevel or degree of smoothness. Rinses item to remove abrasive residue.

May dress grinding wheels or replace worn-abrasive belts. May be designated according to type of equipment used or work performed; for example, Beveler, Glass Diamond-Wheel Edger Edger, Glass Glass Sander, Belt.

8373-170 GLASS POLISHER(glass) DPT:684
GED: 3 SVP: 3 EC: I 5 PA: H 4 7

Polishes edges or surface of flat glass or mirrors, using either of the following methods:

Examines edges and surface of glass for scratches, chips, cracks or roughness. 1. Pours polishing compound into machine hopper or applies compound to felt or cork wheel. Starts machine. Holds and turns glass edge or scratched, engraved or beveled surface against revolving wheel to obtain desired finish. 2. Starts hand-held machine fitted with sand-and-pumice-grinding wheel. Moves grinding wheel over edge or surface of glass to remove flaws. Imparts final polish to glass, using hand buffer fitted with compound-impregnated-felt-buffing wheel.

8373-174 GLASSWARE GRINDER(glass) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Removes rough and uneven surfaces from formed glassware, using grinding machine equipped with metal disk, grinding wheel or abrasive belt:

Turns valves to regulate flow of abrasive compound and water onto grinder or applies abrasive compound to buffing wheel. Starts machine. Presses and turns edges and surfaces of article against moving disk, buffing wheel or belt to remove rough or irregular area. Rinses article in water to remove glass dust.

8373-178 GLASS-BEVELER TENDER(glass) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4

Tends machine that bevels edges of flat glass or mirrors: Presses button to select grinding wheel. Adjusts grinding wheel to specified angle or width of bevel. Presses buttons and turns handwheels to start flow of coolant and polishing compound onto grinding wheel. Starts machine and places glass on machine conveyor or in feed channel. Observes ammeter and turns handwheels to adjust grinding-wheel load. Verifies width, depth and angle of bevel, using gauge. Feels edges for smoothness and rejects defective glass.

8373-182 GLASS-EDGER TENDER(glass) DPT:685
GED: 2 SVP: 3 EC: I PA: M 4 7

Tends machine that grinds and polishes edges of flat glass: Turns handwheel to set speed of feed conveyor to type of glass to be ground. Starts conveyor and grinding and polishing wheels. Positions glass on conveyor, and pushes stock into drive rollers or moves lever to lower pressure-drive roller that forces glass against grinding and polishing wheels. Turns glass to finish other edges and removes glass from machine. Examines quality of glass edge to determine need for wheel dressing or adjustment, and reads ammeter to determine grinding load. Adjusts grinding wheel, using wrench. Feeds glass into washing machine that removes polishing compound. May dress grinding wheels.

8373-186 GLASS-POLISHER TENDER(glass) DPT:685
blocker.
GED: 2 SVP: 3 EC: I PA: VH 4

Tends machine that polishes and cleans surface of flat glass: Positions glass on machine conveyor, assisted by other worker. Turns valves and pulls lever to start flow of polishing compound onto glass surface. Pushes buttons to raise or lower polishing heads and cleaning brushes individually or collectively, according to size and number of glass pieces, or moves lever to lower polishing heads onto glass surface and lifts lever to move machine table and bring entire surface of glass under polishing heads. Turns controls to start washing and drying units.

May clean and lubricate machine, using water and air hoses, oil can and grease gun. May record production. May mix polishing compound according to formula and pour compound into storage tank.

8373-190 GLASS-GRINDING-MACHINE FEEDER(glass) DPT:686

GED: 2 SVP: 2 EC: I 4 5 PA: H 4

Feeds and offbears flat glass and mirrors to and from machines that bevel and grind edges:

Feeds glass or mirrors onto conveyor of machine. Offbears glass at discharge end of machine. Turns glass over and feeds glass onto conveyor to finish other edges. Wipes compound from edges of glass, using waste and examines edges for quality finish. Places finished glass or mirrors on skid.

May polish edges of glass, using belt sander. May be designated according to type of machine fed; for example, Beveling-Machine Feeder Edging-Machine Feeder

Optical Element Abrading, Polishing and Coating Occupations 8373-206 through 8373-254

8373-206 LENS-GRINDER-POLISHER SET-UP MAN(scient. & ind. equip., n.e.c.) DPT:380
GED: 3 SVP: 7 EC: I PA: L 4 7

Sets up machine to grind and polish lens blanks:

Selects and secures grinding or polishing tools to machine spindles, using hand tools. Adjusts screws to set radius of grinding or polishing-arm stroke according to size of lens or holding block. Sets time cycle or micro-switch that stops machine on completion of grinding or polishing cycle. Tilts and secures machine head at angle according to specified curve and thickness of lens.

May set up and adjust other machines used in process; such as, edger, fusing furnace, chiller, caustic-solution sprayer or blocking machine. May dress grinding wheels.

8373-210 OPTICIAN(scient. & ind. equip., n.e.c.) DPT:380
GED: 3 SVP: 7 EC: I PA: L 4 7

Sets up and operates machines to grind eyeglass lenses to prescription specifications and assembles lenses in frames:

Reads lens and frame specifications from prescription or determines specifications of broken lens, using power-determining and optical-centering instruments. Selects lens blank from stock. Sets up and operates machines; such as, generator, polisher, edger and hardener to make lens to specifications. Inspects lens for pits and scratches. Mounts lens in metal, plastic or rimless frames.

8373-214 LENS GRINDER, HAND(scient. & ind. equip., n.e.c.) DPT:681
GED: 3 SVP: 5 EC: I PA: L 4 7

Operates machine to grind curves on surfaces of optical lenses:

Selects lens blank specified on production order. Places lens in holder, block or collet and positions on lap against grinding tool. Starts machine, oscillates control arm and applies pressure manually to grind lens to specifications. Measures lens during grinding process, using gauge or hand spherometer, to ensure conformance to specifications. Removes and washes or wipes lens. Examines surface of completed lens to detect scratches or chips.

May specialize in grinding bifocal lenses, cataract lenses or multifocal buttons and depressions and be designated accordingly; for example, Bifocal-Lens Grinder Multifocal-Button Grinder

8373-218 LENS GRINDER AND POLISHER(scient. & ind. equip., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: I PA: L 4 7

Operates automatic machines to grind and polish standard-strength-lens blanks to individual prescription specifications:

Locates and marks focal axis on lens blank, using protractor. Aligns markings on lens with those on mounting block that correspond to prescription specification. Mounts lens on block and positions block in chuck of machine. Sets dial control, pushes buttons and turns cranks to

set up machine that automatically grinds lens to prescribed curves. Measures lens with calipers and gauge to verify specified thickness and power. Mounts lap and group lens in machine that automatically polishes lens to specifications.

8373-222 OPTICAL-ELEMENT COATER(scient. & ind. equip., n.e.c.) DPT:682
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Controls equipment to coat optical elements with metal or chemical film to change reflection qualities, using either of the following methods:

1. Installs heated filament of metal to be sublimated and condensed in electrical-metal-evaporating unit, using hand tools. Cleans and dries elements, using chemical solution and air blower. Positions elements in holding fixture of evaporation unit. Places vacuum bell over holding fixture, using hoist. Adjusts instrument-panel settings to create vacuum and sublimate material that condenses on surface of element. Observes colour change reflected from element as thickness of coating increases to determine when elements are coated to specifications. Stops vacuum pump and allows unit to cool. Removes element and tests adherence of coating by holding element against rotating rubber wheel or by applying and removing strips of cellophane tape. 2. Mixes chemicals according to formula and pours solution into funnel. Places element under funnel and starts machine to distribute specified amount of solution of element. Electroplates copper backing on silvering by immersing glass in electrolyte and passing electric current through solution. Dries elements in electric oven. Marks specified dimension outlines on elements, using milling machine. Removes excess silvering and copper, using hand scraper and solvents. May inspect coated elements visually under strong light source. May be designated according to item coated; for example, Lens Silverer
Optical-Mirror Coater

8373-226 PRECISION-LENS CENTERER-EDGER(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Locates optical center of precision-instrument lenses and tends machine that grinds lens edge concentric with the optical axis: Coats lens with warm pitch or cement. Affixes lens to periphery of metal tube of centering machine. Rotates tube to observe motion of reflected image on lens or looks through optical system to observe motion of ray of light passing through center of lens. Moves and positions lens until image or ray of light remains stationary as tube is rotated. Hardens pitch with cold water to secure lens in position. Places lens and tube in holder of automatic-grinding machine and grinds lens edge.

8373-230 LENS-POLISHING-MACHINE OPERATOR(scient. & ind. equip., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Operates one or more machines to polish surface of optical elements or lenses:

Reads work order to determine polishing specifications and selects and mounts required polishing tool. Mounts optical element on holding fixture. Moves controls to bring tool into contact with element, adjusts oscillation stroke of machine, sets automatic timer and starts machine. Observes polishing action to detect improper polishing or malfunction of machine. Inspects elements for defects and conformance to specifications, using loupe, test plate and power- determining and lens-centering instruments.

May polish lenses manually by oscillating lens against revolving lap or moving lapping tool over surface of lens. May apply pitch and mount cloth pad on metal lap. May prepare polishing compound and apply to lapping tool. May disassemble and clean polishing machine.

8373-234 LENS EDGER, HAND(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Bevels, grooves or grinds flat edges of optical elements or lenses: Measures element to determine optical axis, bevel angle or conformance to specifications. Adjusts flow of coolant onto grinding wheel and starts machine. Holds and turns element against grinding wheel, or mounts element in clamp and turns handle that feeds edge of lens to check conformance to specifications, using gauge.

May tend machine that cuts lens to shape of selected template. May be designated according to type of work performed; for example, Lens Beveler, Hand
Lens Groover, Hand

8373-238 CONTACT-LENS-CURVE GRINDER(scient. & ind. equip., n.e.c.) DPT:685
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Tends machine that grinds or polishes curved surfaces of plastic-contact lenses to specifications:

Selects diamond-dust-impregnated-metal lap for grinding or adhesive-tape-covered lap for polishing or curve blending. Mounts lap and blocked lens in machine. Applies liquid abrasive, sets timer and starts machine. Measures thickness of lens edge after grinding, using shadowgraph. Examines lens for scratches and blending of curve juncture, using loupe. Routes ground lenses for final finishing. Replaces adhesive tape of polishing lap.

8373-242 CONTACT-LENS-EDGE BUFFER(scient. & ind. equip., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Tends machine that buffs edges of plastic-contact lenses to uniform thickness:

Inserts and locks blocked lens in machine spinner, using wrench. Positions spinner in spring-clip holder and adjusts pressure-control knob. Sets automatic timer and starts machine. Removes lens on completion of buffing cycle and measures lens edge, using shadowgraph. Repeats buffing operation until lens edge is of specified thickness. Removes lens and measures diameter, using gauge. Trims buffing pad, using scissors, and dresses pad, using buffing compound.

8373-246 LENS-EDGER TENDER(scient. & ind. equip., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Tends one or more machines that grind beveled or flat edges on eyeglass lenses:

Clamps lens and specified template in machine. Turns dials and knobs to set specified depth of feed and position of bevel and to start flow of coolant. Starts machine that automatically grinds lens to applied settings. Measures dimensions of completed lens to verify conformance with specifications, using vernier caliper. Dresses grinding wheel as required.

8373-250 LENS-GRINDING-MACHINE TENDER(scient. & ind. equip., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tends one or more machines that grind lenses to specified contour:

Reads production order or identifying symbols on edge of lens blank to determine grinding specifications. Fits grinding tools and adjusts machine settings in accordance with specifications. Positions lens blank in chuck, collet or block and fits holder in machine. Positions lens blank against grinding wheel or lap. Sets automatic timer and starts machine. Removes lens on completion of grinding cycle. Verifies curvature and thickness of ground lens, using template or gauge.

May be designated according to type of lens ground or operation performed; for example,

Convex-Curve Grinder
Countersink Grinder
Cylindrical-Lens Grinder
Multifocal-Lens Generator
Spherical-Lens Generator

8373-254 POLISHING-PAD MOUNTER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Mounts felt pads on metal laps used for polishing lens surfaces: Removes old pad from lap, using knife, hammer, wire wheel and spinning device. Heats metal lap, using gas burner, torch or electric plate. Rubs or pours pitch on heated-lap surface. Positions felt pad on lap. Places matched holder over felt pad and clamps assembly in bench press until pitch sets.

8376-INSPECTING OCCUPATIONS: CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING

This unit group includes occupations in inspecting work, as described under the term title, 02-170 INSPECTOR (any ind.), concerned with quality control activities in clay, glass, stone and related materials machining.

8376-110 CONTACT-LENS INSPECTOR(scient. & ind. equip., n.e.c.) DPT:381
GED: 3 SVP: 4 EC: I PA: S 4 7

Inspects plastic-contact lenses for conformance to prescription, using precision-measuring instruments:
Cleans finished contact lens with tissue and cleaning fluids. Inspects lens, using magnifying glass over blue light, to detect flaws, such as pits or scratches. Measures power of lens, using power-determining instrument. Slides lens down tapered slot of diameter gauge and reads scale to measure lens diameter. Writes specifications of lenses that conform to prescription on shipping envelope and inserts lenses.

8376-114 OPHTHALMIC-LENS INSPECTOR(scient. & ind. equip., n.e.c.) DPT:381
GED: 3 SVP: 4 EC: I PA: S 4 7

Inspects single or multifocal-ophthalmic lenses or lens parts for defects at various stages of processing, performing any combination of the following duties:

Examines lenses or lens parts for processing defects, such as lap scratches, grey areas, pits and chips by holding lens against dark background under light or by examining item under magnification. Inspects blanks with polariscope to detect annealing defects, such as bubbles, striae, fire cracks, or check seals. Verifies curvature of lens with specifications, using lens gauge or template. Measures dioptric power of lens, using lensometer. Measures position and dimensions of multifocal segment with millimeter-scale rule. Writes rework symbols on rejected lenses. Sorts lenses according to size, power and quality.

May be designated according to type of lens inspected or phase or process; for example

Lens-Grinding Inspector
Lens-Polishing Inspector
Multifocal-Lens Inspector

8376-118 OPTICAL-ELEMENT INSPECTOR(scient. & ind. equip., n.e.c.) DPT:381
GED: 3 SVP: 4 EC: I PA: S 4 7

Inspects precision-optical elements (non-ophthalmic) at various stages of manufacture to determine conformance with specifications:

Cleans surfaces of elements with solvents to facilitate inspection. Inspects elements for chips, scratches and pits, under magnification. Examines elements for defects, such as stresses and bubbles, using polariscope. Measures focal length and dispersion of lenses and lens systems, using such instruments as focimeter, collimator and goniometer. Examines coated lenses for depth and hardness of coating. Marks defective elements for reworking or salvaging, using crayon or pencil.

8376-122 INSPECTOR, GLASS(glass) DPT:687
GED: 3 SVP: 3 EC: I PA: M 4 7

Inspects sheets of glass or mirrors to detect imperfections, such as scratches, chips and cracks:

Places item on padded table under light. Rotates and inspects item on both sides and marks defects with crayon or wax pencil. Keeps record of rejections, types of defects and footage loss.

May glue labels onto mirrors and pack mirrors into containers. May specialize in determining salvageability of defective-glass items and be designated accordingly,
Inspector, Glass, Salvage

8376-199 OTHER INSPECTING OCCUPATIONS: CLAY, GLASS AND STONE MACHINING

This group includes clay, glass and stone machining inspectors, not elsewhere classified; for example, those who inspect mounted- eyeglasses, and those who inspect monumental stones for quality of finish and engraving. Typical examples of occupational titles covered by this residual group definition are:

Inspector, Mounted Eyeglasses (scient. & ind. equip., n.e.c.)
Monument Inspector(cement, stone & clay)

8379-CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS, N.E.C.

This unit group includes clay, glass and stone machining occupations, not elsewhere classified, concerned with activities; such as, grinding and cutting slates used for construction purposes or billiard tables; laying out and marking, cutting and carving lines on stone; machining asbestos stock to form brake linings; aligning dimension stone on machine bed preparatory to machining; cutting, finishing and assembling mirror glass; setting up and operating a variety of machines to cut, grind and polish optical elements, such as prisms and mirrors; locating and marking reference points on optical elements; trimming edges of watch crystals; and mounting lens blanks on blocking mould.

**Stone, Cement and Clay Machining Occupations, n.e.c.
8379-110 through 8379-126**

8379-110 SLATE-BED MAKER(sport. & toy) DPT:682
GED: 3 SVP: 6 EC: I 7 PA: VH 4 7

Operates machine to grind slates used for billiard tables to specified thickness and finish, and cuts irregular shapes, matching marks and numbers in slates to facilitate reassembly, using hand and power tools: Assembles numbered slates, face down, on machine bed by butting slates together with locating pins that mate in appropriate sleeved holes. Positions and aligns slates under surfacing head, using crowbar. Lays out and marks dimensions on slate bottom according to pattern or drawing, using scale, straightedge, square and scribe. Chips off excess slate in rough-cutting operation, using pneumatic chisel. Turns wheel to lower surfacing head onto slate. Starts machine and guides rotating wheel over slate surface to grind slate to an even finish. Verifies progress of surfacing, using straightedge. Disassembles bed and turns slates over. Reassembles bed and surfaces top face of bed. Cuts and finishes curved or irregular shapes, such as ball pocket recesses, using pneumatic tools and file. Operates pneumatic chisel to cut matching marks, and sequence and set numbers in slate bottoms. Disassembles bed, places pieces in crate and marks crate with set number.

8379-112 STENCIL CUTTER, STONEWORK(cement, stone & clay) DPT:684
GED: 3 SVP: 4 EC: I 6 PA: M 4 7

Lays out and cuts inscription and design stencils preparatory to sandblasting stone surfaces:

Removes protective sheet from adhesive surface of stencil material, and applies material to surface of stone. Pushes stone along conveyor, and moves levers to position stone on bed of stencil press. Aligns wooden frame on stencil material, and places stencil cutters in frame to produce specified inscription and design. Moves levers to position and depress hydraulic head of press, to cut through stencil material for each unit of pattern in turn. Peels off portions of stencil material to expose stone for sandblasting.

8379-114 STONE-LAY-OUT MARKER(cement, stone & clay) DPT:381
tracer.
GED: 3 SVP: 5 EC: I PA: M 4 7

Lays out and marks designs or lettering on stone preparatory to cutting and carving by other workers:

Positions stone on bench, stool or floor, using crane or assisted by other workers. Marks lettering or design on surface of stone, using drafting instruments, or sketches design or lettering on stone freehand. Traces standard designs on stone, using stylus and following lines on tracing paper.

8379-118 BRAKE-LINING FINISHER, ASBESTOS(asbestos & min. wool) DPT:684
GED: 3 SVP: 3 EC: 1 5 6 7 PA: L 4 7

Machines asbestos stock to produce brake linings:

Cuts brake-lining stock into strips, using band or circular saw. Trims edges of stock, using side-trimming machine. Pushes strip against revolving blade, following line or guide, to cut strip to specified shape or size. Presses strip against grinding wheel to reduce strip to specified thickness. Measures thickness of strip, using micrometer. Places strip and template under drill and moves lever to drill holes through strip. Countersinks drilled holes, using power reamer. Presses drilled strip against buffing wheel to polish surface of material. Inspects completed item for defects.

8379-122 BED SETTER(cement, stone & clay) DPT:664
GED: 2 SVP: 3 EC: 1 PA: M 3 4 7

Aligns dimension stone on timber bed preparatory to grinding, polishing, sawing or chipping:

Builds bed of timbers on flatcar or bed of machine. Signals crane operator to lower stone, and guides it onto timber bed. Aligns stone with arm of polishing or surfacing machine or saw. Levels stone, using wedges, straightedge, spirit level and crowbar. Directs crane operator to position grinding or polishing wheel on stone. Measures and marks block for cutting, using straightedge, rule and crayon. Spreads abrasive material over surface of stone. Shovels abrasive material from mill into storage hopper after grinding and polishing processes.

8379-126 SLATE-CUTTING-AND-GRINDING-MACHINE TENDER (cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Tends machines that cut and grind slate products, such as flooring, mantels and coping to specified dimensions:

Secures saw blade on machine arbour, using wrench. Turns handwheels that adjust saw and grinding head to cut and grind slate to specifications. Places slate strip on conveyor. Tightens conveyor guides against strip, using wrench. Turns valve to spray water on saw and grinding head. Starts machine to cut one edge of strip. Repeats process to cut all four edges of slate. Places strip on conveyor that feeds strip under grinding head to grind slab to specified thickness and polish surface.

Glass Machining Occupations, n.e.c.

8379-146 through 8379-199

8379-146 FLAT-OPTICAL-ELEMENT MAKER(scient. & ind. equip., n.e.c.) DPT:280
prism maker.
GED: 4 SVP: 7 EC: 1 PA: H 4 7

Sets up and operates machines, such as diamond saws and drills, surface grinders and milling and polishing machines to produce uncurved-precision-optical elements:

Cuts required thickness of optical material, using diamond saw. Bores specified holes in element, using diamond drill. Cuts batch lot of optical flats to approximate contours, using milling machine. Grinds edges of element according to specifications, using surface grinder. Warms element on electric-heating plate and applies pitch with brush or spatula, to provide dark background while polishing. Cements elements to brass jig and screws mounted elements in series to holder of polishing machine. Coats lapping tool with polishing compound. Adjusts control arms for specified weight and oscillating motion of element on lap block, and starts polishing machine. Periodically assembles element and master-optical flat under monochromatic (single wavelength) lamp to determine accuracy of polishing.

8379-150 LENS-LAY-OUT MAN(scient. & ind. equip., n.e.c.) DPT:381

GED: 3 SVP: 6 EC: 1 PA: S 4 7

Locates and marks reference points on lens blanks or ground lenses to guide workers in lens processing:

Reads lens prescription specifications. Examines lens to ensure that colour and shade are as specified and to detect surface defects, such as scratches or pits. Measures lens power and locates optical center, using optical instrument, or measures dioptric curve with gauge and locates optical center, using protractor. Marks optical center and axis line on lens. Measures thickness of lens blank, using calipers. Compares obtained readings with prescription specifications and determines cutting and grinding requirements, using charts. Marks edge-cutting lines, curve numbers, multifocal- optical center and R (right) or L (left) on lens. Writes instructions on work slip and routes lens for processing.

8379-154 LENS CUTTER-GRINDER(scient. & ind. equip., n.e.c.) DPT:382
precision-lens generator.
GED: 3 SVP: 5 EC: 1 PA: M 4 7

Operates machines to cut and grind lens-glass stock for optical flats, prisms, mirrors and special-shaped lenses:

Reads drawings to ascertain specifications of optical elements. Positions stock on bed of saw, using clamps or blocks. Starts machine and saws glass to specified size and shape. Inserts and secures grinding tool in head of generator, using hand tools. Clamps element in machine chuck, and sets speed and feed of wheel and chuck according to specifications. Starts machine and sets control that automatically stops machine on completion of grinding or stops machine periodically and measures blank to verify conformance to specifications, using gauge, hand spherometer, micrometer or straightedge. Chamfers edges of elements at various grinding stages to reduce chipping and breakage. Examines surface of lens to detect scratches or chips.

8379-158 MIRROR MAKER(glass) DPT:684
GED: 3 SVP: 5 EC: 1 PA: M 4 7

Cuts, finishes and assembles mirror glass to make a variety of mirrors, performing any combination of the following duties:

Marks size or pattern on mirror glass. Cuts glass to size or shape, using hand-glass cutter. Bevels and polishes edges of glass, using grinding and polishing machines. Tends single-spindle-drilling machine that drills holes in mirrors to accommodate bolts or cords. Mixes paint and silvering solutions and operates silvering range or sprays silver solution on glass. Lays out design or monogram on glass and sandblasts surface within guidelines, using sandblasting equipment. Locates and marks points for fitting mirror hangers on masonite backing, using rule and pencil. Drills holes in backing, using portable-electric drill. Bolts hangers to backing. Fits mirror to backing with hangers or bolts mirror directly to backing. Bolts wings to frame to form multiple mirror.

8379-162 WATCH-CRYSTAL-EDGE GRINDER(scient. & ind. equip., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends lathe that trims edge of watch crystal to correct size and angle: Positions crystal in automatic-centering and holding device of lathe. Presses switch to start lathe and revolve crystal, and turns handle or presses foot pedal to bring powered-abrasive wheel in contact with edge of crystal until stop is reached. Measures diameter and angle of ground edge of crystals at specified intervals, using fixed gauges.

8379-166 LENS BLOCKER(scient. & ind. equip., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: 1 6 PA: L 4 7

Mounts lens blanks on blocking mould preparatory to grinding and polishing operations, using one of the following methods:

1. Places lenses in mould cavities, inserts blocking chuck in mould and pours hot pitch into mould. 2. Places lenses in mould, pours in hot pitch and inserts blocking chuck. 3. Places lenses in mould and fits block in centre of mould that automatically rotates and inserts pitch. 4. Covers block with pitch or pitch-based paint and presses lens blanks into pitch. Warms lenses and blocking mould on heating surface of

blocking machine or in gas flame to prevent cracking and improve adhesion of pitch preparatory to mounting. Allows pitch to cool and harden, scrapes off excess pitch with knife and routes blocked lenses to grinding and polishing area.

May dust bowl-shaped mould with powder and brush lenses with plastic to facilitate blocking. May place block in shaper to ensure cemented lenses conform to curvature of block. May be designated according to type of lenses blocked; for example,

Meniscus Blocker
Spherical-Lens Blocker
Toric Blocker

8379-170 LENS-EDGER FEEDER(scient. & ind. equip., n.e.c.)
DPT:686

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Feeds and offbears optical elements or lenses from one or more machines that grinds their edges:

Inserts element in clamp or between pads of automatic grinder.

Removes element on completion of grinding process. Visually checks edges for defects. Verifies size or diameter, using gauge or ruler.

8379-199 OTHER CLAY, GLASS, STONE AND RELATED MATERIALS MACHINING OCCUPATIONS

This group includes clay, glass, stone and related materials machining workers, not elsewhere classified; for example, those who re-clean metal blocks used for processing lenses blanks or those who clean optical elements, such as lenses, lens parts and prisms for eyeglasses and precision instruments. Typical examples of occupational titles covered by this residual group definition are:

Block Cleaner(scient. & ind. equip., n.e.c.)
Optical-Element Cleaner(scient. & ind. equip., n.e.c.)

839-OTHER MACHINING AND RELATED OCCUPATIONS

This minor group includes occupations, not elsewhere classified, concerned with using machines or hand tools to shape or work various materials, parts or products to specifications by such means as engraving and etching; filing, grinding, buffing, cleaning and polishing; and patternmaking and mould-making. These occupations are classified in the following unit groups:

8390 Foreman, Other Machining and Related Occupations, n.e.c.

8391 Engravers, Etchers and Related Occupations

8393 Filing, Grinding, Buffing, Cleaning and Polishing Occupations, n.e.c.

8395 Patternmakers and Mouldmakers, n.e.c.

8396 Inspecting and Testing Occupations, Machining, n.e.c.

8399 Other Machining and Related Occupations, n.e.c.

8390-FOREMEN, OTHER MACHINING AND RELATED OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.) concerned with supervising and co-ordinating activities of workers engaged in using machines or hand tools to shape or work various materials, parts or products to specifications by such means as engraving, etching, filing, grinding, buffing and polishing; and patternmaking and mouldmaking.

8390-110 FOREMAN, ENGRAVERS, ETCHERS AND RELATED OCCUPATIONS(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in engraving, etching, imprinting or indenting designs or lettering on glass, metals, plastics and a variety of other materials on a production basis, using hand tools, machines and etching solutions, (Unit Group 8391):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Aircraft Parts Etching(air & space-craft)

Foreman, Glass Engraving(glass)

Foreman, Jewellery Design Cutting(jewellery & precious metal prod.)

8390-114 FOREMAN, FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, n.e.c.(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in occupations, not elsewhere classified, concerned with filing, grinding, buffing, cleaning and polishing materials, parts or products, (Unit Group 8393):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Filing and Polishing
Foreman, Metal Buffing

8390-118 FOREMAN, PATTERNMAKERS AND MOULDMAKERS, n.e.c.(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in occupations, not elsewhere classified, concerned with making patterns, moulds, models and templates out of materials; such as, metal, wood, clay, plastic or plaster, for use in the fabrication of a wide variety of products, (Unit Group 8395):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Locksmith(air & space-craft; ship & boat bldg.)

Foreman, Model and Pattern(jewellery & precious metal prod.)

Foreman, Mould Loft(air & space-craft; ship & boat bldg.)

Foreman, Statuary and Art Goods(cement, stone & clay)

8391-ENGRAVERS, ETCHERS, AND RELATED OCCUPATIONS

This unit group includes occupations concerned with engraving and etching designs or lettering on glass, metals, plastics and a variety of other materials and imprinting or indenting designs or letterings on metal on a custom or production basis, using hand tools, machines and etching solutions. Photoengravers and printing- plate engravers are classified in Unit Group 9515, PHOTOENGRAVERS AND RELATED OCCUPATIONS. Fine arts engravers and etchers are classified in Unit Group 3311, PAINTERS, SCULPTORS AND RELATED ARTISTS.

**Engraving Occupations
8391-110 through 8391-138**

8391-110 ENGRAVER, HAND(misc. prod. fab., n.e.c.)

DPT:481

GED: 4 SVP: 7 EC: 1 PA: L 4 7

Lays out and cuts lettering and designs on surfaces of metal dies or plates used to imprint designs on paper, metal, plastic, or porcelain products:

Computes dimensions of lettering and design, according to sketches and drawings, and marks or scribes lay-out lines on workpiece, using drawing instruments, such as straightedge, compass, and scribe. Positions workpiece in vise and cuts designs in surface of workpiece, or trims precut designs, using gravers, punches, files, hammer and shaped chisels. Sharpens and shapes cutting edge of gravers on cutter grinder.

May sketch original design for customer. May enlarge or reduce reproduction of pattern according to size of article to be made. May lay out and cut lettering and designs on surfaces of metal moulds.

8391-114 ROLLER REPAIRMAN, TEXTILE(mach., weld. & forg.)

DPT:361

GED: 3 SVP: 7 EC: 1 PA: H 4 7

Repairs defects on surface of cloth-printing rollers, by performing any combination of the following duties:

Lifts roller into brackets on table with assistance of other worker and using portable hoist. Examines roller to detect defects; such as, pin holes, scratches, missed or extra engravings, and uneven design. Dusts engraved design with chalk and examines roller to determine whether engraving will produce desired effects on cloth. Plugs pinholes, extra engravings, and over-engraved areas with copper wire, hammering it into place, using ball peen hammer and punch. Smooths rough spots with file and removes scratches from roller surface, using burnishing tool. Traces outline of missing engraving on waxed paper and transfers outline to roller, using scribe. Engraves additional lines or designs on roller surface, freehand or by following outline, to fill in gaps in design or missing engravings, using gravers and magnifying glass. Rejects rollers failing to meet specifications.

May repair rollers while roller remains on printing machine.

8391-118 ENGRAVER, DECORATIVE(jewellery & precious

metal prod.; misc. prod. fab., n.e.c.)

DPT:381

GED: 3 SVP: 7 EC: 1 PA: L 4 7

Engraves lettering and ornamental designs on silverware, trophies, aluminum eyeglass frames, and jewellery, working free-hand or from sketches, diagrams, photographs, or samples:

Lays out lettering or design to be engraved on workpiece by coating workpiece with chalk-like powder or solution. Sketches design in coating, locating reference points and marking outline of design, using scribes or gravers. Mounts workpiece in holding device and cuts design, using engraving tools.

May imprint design on surface of workpiece, using inked rubber stamp, and mark outline, using scribes. May sketch original designs. May work free-hand or according to laid out design. May advise customers regarding engraving procedures and costs to assist them to make selection.

8391-122 DESIGN CUTTER, JEWELLERY(jewellery & precious metal prod.)

DPT:381

GED: 3 SVP: 6 EC: 1 5 PA: L 4 7

Cuts decorative designs, lines or facets in metal jewellery settings and ornaments, by machine:

Marks design or lines on workpiece, using scribe, following sample sketch, photograph or standard pattern. Selects and installs appropriate cutting tool for effect desired, using knowledge and experience of process. Clamps workpiece in holding device of machine. Starts machine and cuts designs, lines or facets by moving cutting tool along guide lines. Observes progress of work, using magnifying glass. Replaces dull cutting tools. Cleans work area thoroughly to recover precious metals.

8391-126 GLASS ENGRAVER(glass)

DPT:381

GED: 3 SVP: 6 EC: 1 5 6 7 PA: L 4 7

Engraves ornamental designs on glass and glassware:

Traces or sketches design on glass or glassware, using stencil, china-marking pencil, chalk or brush pen. Mounts abrasive cutting wheel of specified type and size on lathe. Pours water into pans beneath abrasive cutting wheel to cool wheel and reduce dust when grinding. Starts lathe and holds workpiece against outer edge of wheel, twisting and turning glass so that glass is ground according to marked design.

May dress and shape cutting wheel by holding dressing stone against rotating wheel. May polish engravings, using felt and cork wheels. May originate and suggest designs to customer or management.

8391-130 ENGRAVER, PANTOGRAPH(jewellery & precious metal prod.; metal fab., n.e.c.)

DPT:382

GED: 3 SVP: 6 EC: 1 PA: L 4 7

Operates a pantograph engraving machine to engrave designs, symbols, lettering or serial numbers on flat or curved surfaces of products, such as jewellery, cigarette lighters, fountain pens, or name plates. Position end clamps workpiece in holding fixture under cutting tool, using rule, calipers, square, and clamps. Centers and secures pattern under tracing stylus. Sets serial numbers by moving slides on which individual numbers are inscribed or locks type characters in tracing vise. Adjusts machine to reproduce at specified scale. Inserts and locks cutting tool into spindle of machine, using wrench. Starts electric motor that rotates cutting tool. Lowers tracing stylus to beginning point on pattern, and guides stylus to trace pattern and duplicate design, symbols, lettering or numbers on workpiece. Observes action of cutting tool and adjusts movement of stylus or depth of cut by turning graduated wheel or calibrated spindle. Cleans chips from workpiece, using brush or air hose. Examines engraving to ensure conformity to specification, using loupe.

May read drawings to obtain job specification. May sharpen cutting tools, using bench grinder.

8391-132 GLASS MARK-UP MAN(glass)

DPT:684

GED: 3 SVP: 5 EC: 1 PA: L 4 7

Marks designs on flat, curved or spherical glassware, by either of the following methods, to prepare surfaces for engraving or etching:

1. Sketches design on cardboard, according to drawing, using drafting instruments. Cuts out design, using razor blade or scalpel. Positions glass, such as mirror prior to silvering, over cut-out, and traces design on glass, using marking pen or pencil. 2. Studies design drawing, and measures dimensions of glassware, to determine location and number of design repeats required to meet specifications. Lays out reference lines and points, such as upper and lower limits of pattern, and center points of design repeats, on glass surface, using brush, paint, and measuring instruments.

8391-134 GLASS DECORATOR(glass)

DPT:685

GED: 2 SVP: 4 EC: 1 5 6 PA: M 4 7

Tends machine that cuts designs on surface of glass products, such as shower and bath tub enclosures, bowls, and vases, using sand or abrasive powder and protective stencils:

Fits rubber stencil mask to sand blast machine, using thumb screws and clamp, or fits brass or rubber stencil over workpiece. Starts machine that blows abrasive, such as sand or aluminum oxide against uncovered areas of workpiece to cut design into surface according to stencil pattern. Removes protective stencil from workpiece and examines workpiece to ensure conformance to specifications.

May polish glassware, using rotating buffing wheel.

8391-138 LENS-BLANK MARKER(scient. & ind. equip., n.e.c.)
DPT:684

GED: 2 SVP: 3 EC: I PA: L 4 7

Marks lens blanks for processing:

Marks focal length, type, trademarks, or other identifying information on lens blanks, using rubber stamp or diamond-pointed tool, or dots surface of blanks to locate optical axis, using pedal-operated centering machine, to guide workers engaged in grinding blanks to specifications.

Etching Occupations
8391-158 through 8391-170

8391-158 ETCHER, AIRCRAFT PARTS(air & space-craft)
DPT:381

chem-mill processor.

GED: 4 SVP: 6 EC: I 6 7 PA: M 4 7

Etches portions of parts used in aircraft construction to remove metal to specifications:

Cleans surface of workpiece, using cloth and solvent, to ensure uniform adhesion of masking material or liquid coating. Covers workpiece with templates, masking or adhesive tape, or chemically resistant coatings to prevent etching of specified areas of workpiece. Marks areas to be etched, using template and scribe. Removes masking material from areas to be etched and presses down edges of masking on workpiece. Immerses workpiece in etching solution for specified period of time. Removes workpiece from etching tank and rinses it in neutralizing solution and water. Measures depth of etch, to ensure conformance to specifications, using micrometer and depth gauge.

May repeat process in successive stages to produce varying depths of etch, as specified.

8391-162 ETCHER(misc. prod. fab., n.e.c.)
DPT:387

GED: 3 SVP: 5 EC: I 6 7 PA: L 4 7

Etches, designs, lettering and figures on metal plates by performing any combination of the following duties:

Mixes etching solution according to formula, and pours mixture into etching tank. Places plate on rack in etching tank, sets tank timing controls, and starts machine that sprays plate with etching solution. Removes plate periodically and measures depth to which metal has been etched, using gauge. Examines plate to ensure conformance to specifications. Washes plate to remove etching powder and protective ink. Brushes etching powder on surface of plate to prevent undercutting of reproduction. Prepares plates for etching by placing silk screen of specified design or lettering over workpiece and brushing acid resistant solution or ink through screen.

8391-166 OPTICAL-GLASS ETCHER(scient. & ind. equip., n.e.c.)
DPT:684

GED: 3 SVP: 4 EC: I 6 7 PA: L 4 7

Etches numerals and graduation lines on optical glass surfaces, using either of the following methods:

1. Mounts glass workpiece in holder. Dips glass in molten wax to obtain uniform protective coating and mounts holder in pantograph. Positions tracing stylus of pantograph on template and guides stylus to reproduce pattern of lines and numerals in wax coating of workpiece. Exposes glass to hydrofluoric acid fumes to etch pattern. Cleans glass with water and solvents. Fills etched characters with opaque paste to improve readability. Examines etched glass for conformity to specifications, using microscope. 2. Pours photosensitive solution onto glass blank mounted on horizontal rotary fixture and pushes controls that rotate blank to whirl-coat it. Positions and clamps photo-printing pattern over sensitized glass blank in vacuum printing frame. Turns on arc light to print pattern on blank. Immerses exposed blank in water to remove non-exposed portion of coating and develop pattern. Exposes blank to hydrofluoric acid fumes that etch glass for specified time in areas not covered by coating. Rinses etched glass in water to remove hydrofluoric acid and immerses in solvent bath to remove coating. Examines etched glass for conformity to specifications, using microscope.

8391-170 ETCHER, ELECTROLYTIC(metal fab., n.e.c.)
DPT:885

GED: 2 SVP: 2 EC: I PA: L 4 7

Tends equipment that electrolytically etches markings, such as insignia, trademarks, or part numbers on metal articles:

Switches on control unit that causes electric current to flow through electrolytic solution. Positions workpiece on stencil and against contact strip to complete electric circuit. Places workpiece on felt pad saturated with electrolytic solution that etches stencil markings on metal. Switches off control unit and removes workpiece from pad after specified time, and sprays it with water or neutralizing solution to remove acid. Places workpiece on rack to dry.

Imprinting and Indenting Occupations
8391-190 through 8391-206

8391-190 CHASER(jewellery & precious metal prod.)
DPT:381

GED: 4 SVP: 6 EC: I PA: L 4 7

Reproduces decorative designs on articles made of precious or other metals following photographs, drawings or samples:

Outlines design on surface of article, using hand tools. Positions article on forming block and raises design area, by tapping with hammer. Strikes small tools with hammer to indent design.

May pour molten pitch into article to serve as foundation for further processing. May sketch designs for custom articles.

8391-194 IMPRINTER AND CASTER, SEALS(misc. prod. fab., n.e.c.)
DPT:381

seal maker.

GED: 3 SVP: 4 EC: I 6 PA: L 4 7

Imprints characters and designs in surface of die, according to customer's copy or specification, and casts corresponding male die for use in seals, such as corporate or notary seals:

Marks vertical-center line on blank or prestamped dies, using compass. Selects style and size of characters and visually spaces characters from center line to obtain symmetry. Imprints characters in surface of die, using hand stamps and mallet. Examines die and restamps closed or distorted characters. Cleans die, using wire brush. Installs finished female die in device used to impress die in molten alloy to form male die. Melts metal alloy in gas-fired crucible and ladles it onto aluminum foil sheet placed on device holding female die. Drops die into metal alloy and allows it to cool. Removes dies and files notch in both to ensure alignment in seal press and trims away excess metal, using knife. Oils faces of dies to prevent sticking. Applies adhesive fabric to base and ram of press and aligns and mounts dies. Imprints seal on purchase order to verify copy.

8391-198 MOULD STAMPER(mach., weld. & forg.)
DPT:484

GED: 3 SVP: 4 EC: I PA: M 4 7

Lays out and stamps lettering and designs on tire moulds:

Positions and clamps mould on worktable manually or using hoist. Studies drawings to determine location and spacing of single letters, words or designs. Computes spacing of letters. Applies blue pigment to mould and measures and marks reference lines, using protractor, scales and scribes, to indicate location of specified stampings. Positions stamps according to lay-out lines and holds and hammers stamps to imprint letters and designs in mould. Measures impressions to verify uniform depth, using template.

May remove burrs and smooth interval surfaces of mould, using scrapers, files and abrasive wheels.

8391-202 NAME-PLATE STAMPER(mach., weld. & forg.)
DPT:685

GED: 3 SVP: 3 EC: I PA: L 4 7

Tends machine that stamps identifying data on name plates for manufactured products, using either of the following methods:

1. Aligns type in die block, using set screws. Positions die block on press bed, and feeds blank name plates into power or manually operated press to imprint data on blank. 2. Turns wheel of stamping machine to specified character and pulls lever to stamp character on name-plate blank. Repeats operation for each character until specified information is stamped on plate.

May place name plate in curved forming block and close block manually to shape plate to specified curvature.

8391-206 IMPRESSING-MACHINE TENDER(mach., weld. & forg.) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Tends machine that impresses serial or part numbers, sizes, trademarks, or insignia into metal objects, such as small arms parts: Locks specified dies in holder on die bed, using wrench. Positions workpiece in holding fixture and turns handwheel or starts hydraulic ram to impress dies into surface of part. Stamps parts unsuited to press operations, using hand dies and hammer. Examines impressions for accuracy and clarity and replaces worn dies. May change dies after each impression when numbering in sequence.

8393-FILING, GRINDING, BUFFING, CLEANING AND POLISHING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with filing, grinding, buffing, cleaning and polishing materials, parts or products.

Filing Occupations, n.e.c. 8393-110 through 8393-114

8393-110 MOULD DRESSER(non-ferrous metal) DPT:684
GED: 2 SVP: 4 EC: I PA: M 4 7

Smooths interior surfaces of moulds used to cast aluminum ingots: Inspects interior surfaces of moulds to locate defects which would affect ingot finish, and release of ingots from moulds. Positions moulds for work, using hoist, and smooths interior surfaces, using files, abrasive cloths and papers.

8393-114 FILER, HAND(metal fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Files metal parts to specified shape, or to form cutting edges: Clamps part in vise or holding fixture. Selects file of suitable size, shape and cut, and files part to specifications. May compare hardened template with part and file part to match template.

Grinding Occupations, n.e.c. 8393-134 through 8393-178

8393-134 GRINDER AND SHARPENER(any ind.) DPT:381
GED: 3 SVP: 5 EC: I 6 7 PA: L 4 7

Sharpens fine cutting tools, such as hair clippers, and special-purpose shears and scissors performing any combination of the following duties:

Holds cutting edge of blade against rotating abrasive wheel, or clamps blade in holder or carriage of machine to maintain correct position, and grinds blade, applying knowledge of cutting-edge angles and clearances. Inspects blade, and uses abrasive wheels of finer grade, when necessary. Finishes fine edges, using whetstone.

May grind and sharpen general-purpose tools and implements; such as, garden shears, household scissors and saws, chisels, knives, and lawnmowers.

8393-138 MILL-ROLL GRINDER(rubber) DPT:682
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates powered grinding wheel to resurface worn or damaged mill rolls used to compress reclaim rubber into slabs:

Examines sample rubber slab from mill to determine extent of grinding required. Bolts electric grinder to fixture beside mill, and selects and installs grinding wheel, using hand tools. Adjusts fixture to align grinding wheel with roll, and starts grinding wheel and roll rotating. Engages feed screw so that grinding wheel travels

horizontally along roll. Continues grinding process until roll meets specified standards.

May spread abrasive compound on closed rolls of mill after grinding, start rolls to polish surface and wipe abrasive from polished rolls.

8393-142 BIT-SHARPENER TENDER(mach., weld. & forg.) DPT:685
GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Tends bit-sharpening machine to sharpen detachable mining-drill bits: Inserts bits in clamp and fastens them in place with wrench. Rotates and moves clamp to bring cutting edges of bits into contact with grinding wheels. Lubricates sharpening machine and changes worn grinding wheels, using hand tools.

May issue sharpened bits to drillers in exchange for dull bits, and record such issues.

8393-146 BENCH GRINDER, HAND(any ind.) DPT:684
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4 7

Manipulates metal objects, such as machine parts, castings or sheet metal subassemblies, against abrasive wheel of bench grinder, to remove irregularities or surplus metal:

Clamps part in workholder or holds part in hands, and feeds it against grinding wheel to remove projections, burrs, or scratches. Examines surfaces visually, and measures dimensions, using fixed gauges, to ensure conformance to standards. Selects and installs grinding wheel of size and grade suitable to shape of workpiece and finish specified. Trues surface of grinding wheels, using dressing tool, and replaces worn wheels, using wrench. May deburr parts, using hand tools.

8393-150 GRINDER-CHIPPER(any ind.) DPT:684
GED: 2 SVP: 3 EC: B 5 6 7 PA: M 2 3 4 7

Grinds, chips and wire-brushes imperfections, such as casting projections, welding slag and highspots, from metal parts or structures to improve finish or to prepare them for further processing:

Positions workpiece on stand, bench or floor, manually, or by means of hoist. Installs selected grinding wheel, chisel or wire brush in portable power tool, and guides tool over surface to be dressed. Inspects work visually, and repositions workpiece as necessary to present new surfaces for treatment. Dresses grinding wheels and sharpens chisels.

May work to specified guidelines, using straightedge or template, to remove excess stock. May work on large fabricated structures from scaffold or platform, or from position on structure itself.

8393-154 GRINDER-TRIMMER(any ind.) DPT:684
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4 7

Grinds and smooths surfaces of products; such as, castings, automobile bodies, hardware or household appliance components, to prepare them for further processing:

Installs suitable grade of abrasive disk, belt or wheel on portable grinder, according to specifications and knowledge of process. Examines surface to be ground and starts grinder. Moves grinder over surface to remove major imperfections. Installs finer disk, belt or wheel, and smooths ground areas to produce specified finish.

8393-158 TOOL GRINDER(any ind.) DPT:684
GED: 2 SVP: 3 EC: I 6 7 PA: M 4 7

Sharpens tools, such as chisels, drills, knives and cleavers:

Starts bench or pedestal grinder, and holds tool to be sharpened against machine rest so that cutting edge of tool bears against grinding wheel at correct angle. Dips tool in water repeatedly to prevent overheating of cutting edge. Inspects cutting edge and continues grinding process until required sharpness is attained.

May finish cutting edges by using a finer abrasive wheel or whetstone. May tend semi-automatic machine by clamping tool to be sharpened in holder of machine carriage, and turning handles to feed carriage across grinding wheel, so that cutting edge of tool is ground at correct angle.

8393-162 GRINDER, MACHINE KNIFE(any ind.) DPT:685
GED: 2 SVP: 3 EC: I 6 7 PA: M 4 7

Tends grinders that sharpen slicing knives or scraper blades used in industrial machines, such as beet-slicing machine:

Aligns and secures knife or blade in grinding machine fixture, using wrench. Moves lever or turns handwheel to set machine feed. Starts machine that automatically grinds knife or blade to specified sharpness or edge contour.

May disassemble scraper blade from supporting plates, using wrench, and trim scraper edge, using shear, prior to automatic grinding. May finish edge of knife or blade by hand, using whetstone.

8393-166 SWING GRINDER(iron & steel; non-ferrous metal) DPT:684
snag grinder.
GED: 2 SVP: 2 EC: I 5 6 7 PA: H 3 4

Removes projections from surfaces of metal castings by grinding:

Places casting in work position manually, or by means of hoist or crane. Grasps handles of counterbalanced frame, and pulls grinding wheel down onto surface of casting and starts wheel to remove projections, such as gates, fins and parting lines. Repositions casting as required to expose surfaces to be ground.

May change belts between motor and grinding wheel pulleys, to regulate grinding speed.

8393-170 GRINDER, COIL SPRINGS(metal fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 6 7 PA: M 4 7

Tends machine to grind one or both ends of coil springs, used in such applications as automotive suspensions, by either of the following methods:

1. Bolts spring-holding fixture to machine table, using wrenches. Clamps spring in fixture and starts machine. Turns handwheel to feed end of spring against face of grinding wheel, as machine table moves from side to side. Removes spring and inspects ground end visually, or uses fixed gauge, to determine that flat area conforms to specifications.
2. Loads coil springs into slots of fixture. Starts machine, so that ends of springs are pressed against face of grinding wheel, as wheel and fixture revolve. Inspects ejected springs visually, or uses fixed gauge to measure flat area.

8393-174 PELLET GRINDER(mach., weld. & forg.) DPT:685
shot grinder.
GED: 2 SVP: 2 EC: I 5 6 PA: M 3 4 7

Tends machine that grinds and polishes steel pellets to specified diameter for use as shot in air guns or shot gun shells:

Obtains pellets from tote boxes stacked on handtruck. Scoops pellets into feed hopper and starts machine that rolls and grinds pellets into shot. Turns valve handle to control flow of coolant and adds abrasive powder to hasten abrasive action. Measures processed shot at machine discharge chute to verify size, using gauges. Turns handwheels to adjust pressure plates that regulate size of shot. Loads finished pellets on handtruck and tags tote boxes with date, type and weight of pellets.

8393-178 PLATEN GRINDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 7 PA: M 4 7

Tends machine that grinds surface of rubber platens used in typewriters, adding machines, and similar business machines, to specified diameter and finish:

Mounts platen between centers of headstock and tailstock of machine, and positions stops to limit travel of reciprocating carriage, according to length of platen, using hand tools. Turns control to set depth of cut of grinding wheel, according to specified diameter of platen, and starts rubber grinding operation. Examines finish of platen surface, and measures diameter, using micrometer.

May tend double-bladed-cutting machine to trim ends of platen. May recondition used platens, by heating in oven, cutting and stripping rubber sleeve, and installing new sleeve on metal cylinder, using arbor press, before grinding.

Buffing Occupations, n.e.c.
8393-202 through 8393-214

8393-202 BUFFING-LINE SET-UP MAN(any ind.) DPT:360
GED: 3 SVP: 6 EC: I 5 6 7 PA: M 4 7

Sets up progressive line of buffing machines used to polish metal parts to specified finish:

Selects holding fixtures and bolts parts to feed mechanisms, using wrenches. Selects buffing wheels and spacers, and installs them on spindles. Applies knowledge of buffing operations to determine type of wheel, angle of contact and pressure against workpiece. Directs machine tenders, and examines first piece through buffing line, and subsequent pieces at intervals, for conformance to specifications. Adjusts set-up to achieve specified finish. Changes surface speed of buffing wheels by varying ratio of drive-pulleys or by changing size of buffing wheels. Performs experimental buffing to determine best method of treating new products.

May set timers to control feed mechanisms of buffing machines according to size and material of workpiece, and to control application of lubricants and abrasives.

8393-206 BUFFING-MACHINE SET-UP OPERATOR(any ind.) DPT:680
GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Sets up and operates semi-automatic machines to buff metal parts for products, such as pens and pencils, domestic appliances or automobiles:

Selects holding fixtures, buffing wheels and spacers, and installs them on machine, using wrenches. Clamps or fits workpieces to holding fixtures and starts feed mechanisms, or inserts long workpiece between feed rollers. Measures and sets angles, clearances and travel of feed mechanisms, to obtain effective contact between workpieces and buffing wheels. Starts buffing wheels and applies buffing compound by hand, or opens valve to release liquid compound spray. Examines workpieces to ensure that specified finish is obtained.

8393-210 BUFFER, HAND(any ind.) DPT:684
GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Bufs metal parts to finish them for use in products; such as, automobiles, aircraft, household appliances and hardware:

Starts powered buffing wheel and applies stick of buffing compound to surface. Holds parts and manipulates them in contact with wheel, applying knowledge of buffing processes. Changes buffing wheels according to type of finish required, and replaces worn wheels, using hand tools.

May shape buffing wheels to fit contours of parts to be buffed, using trimming tool or lathe.

8393-214 BUFFING-MACHINE TENDER(any ind.) DPT:665
GED: 2 SVP: 2 EC: I 5 6 7 PA: M 4 7

Tends previously set-up buffing line machine used to buff metal parts to specified finish:

Starts machine and holds bar of abrasive compound against buffing wheels to coat them. Places or clamps parts in holding fixtures as machine indexes. Removes buffed parts and examines them for acceptable finish. Informs set-up man of buffing defects.

Cleaning Occupations, n.e.c.
-- 8393-234 through 8393-266

8393-234 GLASS-MOULD CLEANER(glass) DPT:684
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 3 4 7

Cleans and polishes bottle-forming moulds and mould parts by hand polishing and using vapour-blast cleaning machine:

Rubs mould surface with oil or kerosene and abrasive stone, to remove scale, rust, scratches and dirt and obtain a high lustre, maintaining cavity design by removing a minimum of cavity surface metal. Starts pumps on vapour-blast machine to circulate water and cleaning compound through hose. Places parts on table and pushes table into machine cabinet. Starts flow of compressed air through hose, using knee controls. Holds and turns parts while directing pressurized stream of cleaning compound onto parts to remove dirt,

carbon and scale. Dips parts in oil solution to prevent rusting. Stores cleaned moulds in storage bins and transfers moulds and mould parts from storage to production area, using handtruck.
May mix cleaning compound for vapour-blasting machine.

8393-238 METAL CLEANER, IMMERSION(any ind.)
DPT:685

grease remover; pickler.

GED: 2 SVP: 3 EC: I 6 7 PA: H 4 7

Tends equipment that chemically cleans grease, scale, dirt and other foreign matter from metal objects to prepare them for other processes, such as machinery repairing, welding, electroplating, galvanizing or painting;

Removes shavings, dirt and rust spots from objects, using air hose, file or sandpaper. Places objects on racks or in containers. Immerses objects in chemical and rinsing solutions and removes them, using hoist. Moves controls to start electric hoist and to regulate temperature of solution. Maintains strengths of cleaning solutions by adding specified amount of chemicals. Drains, cleans and refills tanks with chemicals, as specified.

May be designated according to task performed or according to type of cleaning equipment used; for example,

Degreaser

Ultrasonic Cleaner

Vibrating-Vat Tender

8393-240 CLEANER, METAL BLUING(metal fab., n.e.c.; sport. & toys)
DPT:687

GED: 2 SVP: 3 EC: I 4 7 PA: M 4 7

Cleans and prepares metal parts, such as sub-assemblies of automatic pistols, revolvers and toy gun barrels for bluing;

Blows out dirt particles remaining after sand blasting, using air hose, and wipes parts with cloth. Places parts in rack or wire basket and immerses them in degreasing tank. Mixes alcohol and whitening powder and rubs resultant paste onto gun or toy parts to facilitate bluing. Wires or hooks parts, and attaches them to immersing rack or rod. Blows excess solution from blued parts with air hose. Inspects parts for nicks, scratches, clearness of trademark and cleanliness.

May immerse parts in tank for specified time for cold bluing. May disassemble and reassemble components of automatic pistols and revolvers, using wrenches and screwdrivers. May position gun barrel in embossing machine to press trademark die into underside of barrel. May be designated according to item cleaned; for example,

Firearms Cleaner(metal fab., n.e.c.)

Toy-Gun Cleaner(sport. & toys)

8393-242 CARTRIDGE-PARTS CLEANER(explosives)
DPT:685

GED: 2 SVP: 2 EC: I 5 6 PA: M 3 4

Tends equipment that tumbles metal cartridge parts in acid and detergent solution to remove oil, scale and dirt, and dries them:

Loads parts into hopper of machine, manually or using hoist. Moves controls to start conveyor system, open gate on hopper and rotate open-end tumbling barrel. Turns steam and water valves and reads gauges to regulate temperature and level of liquid in tanks or barrel and heat in drying drum. Adds cleaning chemicals, according to chart, to maintain solution at specified concentration. Examines parts at ejection chute of drier to determine if they are completely cleaned and dried. Stacks tote boxes of finished parts on pallet, manually or using hoist.

May tumble parts in metal drawing (lubricating) solution before drying. May operate electric tier-lift truck or hoist, to position containers of parts on platform above feed hopper.

8393-246 SANDBLASTING-MACHINE TENDER(any ind.)
DPT:685

rotoblast operator; shotblast-machine tender.

GED: 2 SVP: 2 EC: I 5 6 7 PA: M 4 7

Tends equipment that cleans dirt, sand, scale, paint, tar, grease and rust from metal objects with blast of abrasive, such as steel shot and sand or steel grit, by one or more of the following methods:

1. Dumps or shovels objects into tumbler, manually or using hoist. Starts tumbler that exposes surfaces of objects to blast of abrasive and tumbling action. 2. Stacks objects on racks or on swinging table. Places

racks in chamber, or pushes swinging table into chamber, and starts blast of abrasive for specified period. 3. Places objects on moving conveyor that carries objects under abrasive blast. Examines workpiece for completeness of cleaning or conformance of finish to specifications.

May pour abrasive material into feed hopper to replenish supply. May chip and grind objects to obtain smooth surfaces, using air grinder, electric sander, pneumatic hammer, chisel and steel brush.

8393-250 ULTRASONIC-CLEANING-MACHINE TENDER
(any ind.)
DPT:685

GED: 2 SVP: 2 EC: I 4 PA: L 4 7

Tends equipment that cleans, rinses and dries jewellery or electronic parts before and after plating or soldering operations:

Dumps or places parts in basket and immerses basket in ultrasonic tank containing prepared cleaning solution. Sets timer according to type and size of parts to be cleaned. Starts cleaning cycle to produce ultrasonic waves causing microagitation around parts. Transfers basket from cleaning to rinsing tank. Places basket in oven and sets timer for specified drying period. Places units in trays or boxes for delivery to processing areas.

May paste identifying label on boxes. May record number of baskets and type of units cleaned. May be designated according to article cleaned; for example,

Electronic-Cleaning-Machine Tender(electronic equip.)

Jewellery Cleaner(jewellery & precious metal prod.)

8393-254 WASHING-MACHINE TENDER, INDUSTRIAL
(any ind.)
DPT:685

GED: 2 SVP: 2 EC: I 4 5 PA: M 4

Tends machines that wash and dry manufactured articles or components to clean them or to prepare them for further processing:

Dumps specified quantity of detergent into machine, using hand scoop, and turns valve to admit water, or turns valve to admit prepared cleaning solution. Loads objects or racks of objects in washing machine. Sets controls to regulate length of washing cycle and water temperature. Starts machine. Removes objects on completion of cycle, and stacks them on racks, or places them in drying machine and starts machine. Places articles or components in clean containers after drying.

May tend machine that rinses articles.

8393-258 DRIFTER(iron & steel)
DPT:686

GED: 2 SVP: 2 EC: I 5 7 PA: M 4

Removes scale from inner surfaces of pipe, using drifting machine:

Installs specified drift mandrel in machine, using hand tools, and inserts pipe into head of machine. Moves controls to tighten pneumatic grip that holds pipe in position, and to move mandrel in and out of pipe loosening scale.

8393-266 SANDBLASTER(any ind.)
DPT:687

GED: 2 SVP: 2 EC: I 5 6 7 PA: M 4 7

Directs blast of abrasive-laden compressed air or water from nozzle against metal to remove adhering scale, sand, paint, grease, tar, rust and dirt and impart on even finish:

Moves controls to adjust pressure and concentration of abrasive to obtain specified finish. Dons gloves and helmet or hood to prevent breathing sand-laden air and injury to eyes and hand. Turns air valve on helmet to allow air to circulate in helmet. Inserts hands through holes in side of cabinet, or places and holds part inside cabinet under sandblast nozzle. Steps on pedal to start sandblast stream. Turns part in hands or on floor to expose specified surfaces to sandblast. Examines workpiece for completeness of cleaning or conformance of finish to specifications.

May mask area not being sandblasted. May mix liquefied abrasive according to instructions received. May deburr parts, using belt sander. May setup portable equipment at work location. May be designated according to type of equipment used; for example,

Cabinet-Abrasive-Blast Man

Casting Finisher

Shotblaster

Polishing Occupations, n.e.c.
8393-286 through 8393-306

8393-286 POLISHER, KNIFE BLADES(jewellery & precious metal prod.) DPT:682
GED: 3 SVP: 3 EC: I 5 6 7 PA: M 4

Operates battery of semi-automatic machines to polish knife blades: Selects polishing rollers according to degree of polishing required. Mounts rollers on machine spindles, and adjusts spindle speeds and work holder stroke, using hand tools. Loads knives into workholder and starts machine. Removes knife from workholder at end of timed cycle, and presses switch to feed and polish next knife. Repeats above sequence for each machine in battery. May brush abrasive compound onto polishing rollers when compound is not applied automatically.

8393-290 POLISHING-MACHINE OPERATOR(any ind.) DPT:682
GED: 3 SVP: 3 EC: I 5 6 PA: M 4 7

Operates belt-sanding machine to polish flat surfaces of metal or other material, such as chain-saw bars, plate steel and rubber or vinyl slabs: Installs abrasive belt of specified grit, using hand tools. Places workpiece on conveyor and turns knob to bring workpiece into contact with polishing belt. Turns valve handle to regulate flow of coolant onto polishing belt and starts machine. Examines first run workpiece to determine conformance of finish to specifications and adjusts height of conveyor or sanding belt as required to achieve specified finish. Replaces worn polishing belts, fills coolant tank and cleans collection reservoir, using hand tools to maintain machine in operating condition.

8393-294 NIB FINISHER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: I PA: L 4 7

Manipulates tips of fountain pen nibs against polishing wheel to attain specified smoothness and finish: Applies compound to fine polishing wheel, and manually manipulates nib of pen against wheel until it appears smooth. Wipes nib with cloth, and draws thin paper through slit of nib, to remove polishing compound. Examines tip of nib, using magnifying glass, and verifies smoothness by simulating writing action on paper. May tend semi-automatic machine that smooths fountain pen nibs in production quantities.

8393-298 POLISHER AND BUFFER, SHEET METAL(metal stamp., press. & coat.) DPT:684
GED: 2 SVP: 3 EC: I 5 6 7 PA: M 4 7

Polishes and buffs sheet metal parts and products, such as freezers, storage tanks, display cases, metal furniture and transport vehicles: Secures sheet or part to work table, and guides hand-held power polisher over surface to remove scratches and other defects. Removes dents, using hammer and blocks. Applies oil and abrasive compound to powered buffing brush, and repeats process to achieve specified finish. Polishes recessed areas by hand, using fine emery cloth. May polish large sheets or panels by placing them on sanding machine table, and bringing continuous abrasive belt into contact with surface of workpiece.

8393-302 POLISHER, SLIDE FASTENERS(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: I PA: L 4 7

Tends one or more automatic machines that deburr and polish metal links on slide-fastener tapes: Positions container of single tape behind machine, and threads end through guides, feed rollers, tension bars, and under wire brushes to pick-up drum. Starts machine, and observes passage of tape through rotating brushes and onto drum. Examines brushed links to verify smoothness. Adjusts pressure of wire brushes and feed rollers, by turning wing nuts. Attaches ends of preceding and following tapes, using stapler, to maintain continuous operation. Notifies supervisor of any machine malfunction.

8393-306 TUMBLING-BARREL TENDER(metal fab., n.e.c.) DPT:685
barrel attendant.
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends tumbling barrel to lap, polish and clean metal balls or rollers used in the manufacture of ball or roller bearings: Reads job order to obtain specifications, such as size, number and tolerance of balls or rollers to be cleaned, lapped or polished. Loads barrel, manually or using shovel. Fills barrel with water and adds specified amount of lapping compound. Bolts top on barrel and starts tumbler. Measures balls or rollers for tolerance, using indicator gauge. Tumbles lapped balls or rollers in soapy water and in cob meal to clean and dry them. Empties tumbling barrel into hoppers for further processing. Cleans barrel to remove metal dust, using water, soap and hose.

Other Filing, Grinding, Buffing, Cleaning and Polishing Occupations, n.e.c.
8393-326 through 8393-399

8393-326 TUMBLING-MACHINE TENDER(any ind.) DPT:685
GED: 2 SVP: 2 EC: I 4 5 PA: M 4 7

Tends one or more tumbling machines to clean, deburr, smooth and polish articles, such as jewellery, buttons or metal stampings: Loads barrel of machine with workpieces and types and quantities of abrasives and fluids as specified. Clamps cover on barrel, and starts machine to tumble parts for specified period. Examines sample parts and continues tumbling process, if necessary. Unloads parts by hand, or tips contents of barrel into container, or onto shaker- screen. May dip basket of parts in cleaning solvent to degrease prior to tumbling. May dip tumbled parts in oil to prevent corrosion. May dry parts in hot air centrifuge or oven.

8393-399 MISCELLANEOUS OCCUPATIONS IN FILING, GRINDING, BUFFING, CLEANING AND POLISHING.

This group includes filers, grinders, buffers, cleaners and polishers, not elsewhere classified; for example, those who smooth, clean or polish a variety of materials, parts or products, using machines, or hand or powered tools. Typical examples of occupational titles covered by this residual-group definition are:
Deburrer(mech. equip., n.e.c.)
Insulator Cleaner(electric. equip.)
Polisher, Automatic Machine(metal fab., n.e.c.)
Polisher, Spectacle Frames(scient. & ind. equip., n.e.c.)

8395-PATTERNMAKERS AND MOULDMAKERS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with making patterns, moulds, models, templates and samples out of metal, wood, clay, plastic, plaster, or other materials for use in the fabrication of a wide variety of products; such as, jewellery; structural parts, furniture, brick, tile, pottery, concrete products, plaques, figurines, statuary, and plastic products. Occupations concerned with making wood patterns involving the methods applied to machining wood are classified in Unit Group 8351, WOOD PATTERN-MAKING OCCUPATIONS. Occupations concerned with making patterns for textile, fur and leather products are classified in Unit Group 8551, PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS.

8395-110 FURNITURE REPRODUCER(furn.) DPT:281
GED: 5 SVP: 7 EC: I PA: L 4 7

Prepares working drawings and templates of antique or custom furniture to facilitate reproduction:

Draws sketches of furniture item freehand or with drawing instruments. Measures item with rule and calipers and notes dimensions on drawing. Makes detailed drawings of joints, carvings, and milled sections for shop use. Traces or draws outlines on plywood or cardboard and cuts out part along outline to make template. Marks templates, indicating name of part, type of construction, and kind of wood and finish.

May make drawings from pictures when models are not available.

8395-114 SAMPLE MAKER, JEWELLERY(jewellery & precious metal prod.) DPT:461
GED: 5 SVP: 7 EC: I PA: L 4 7

Produces wax samples and prepares specifications of articles of jewellery to original designs; and computes production costs:

Moulds and carves wax to produce sample jewellery, using modelling tools. Compiles design specifications, such as type of alloy, metal content, and weight. Computes cost of material and labour to determine production costs. Consults with customers to provide information on design and cost, and to suggest modifications.

8395-118 MODEL MAKER(any ind.) DPT:281
GED: 4 SVP: 7 EC: I PA: M 4 7

Constructs scale or full-size models used in the design and manufacture of products; such as, boats, aircraft, automobile accessories and household appliances:

Builds rough framework from materials, such as foamed plastic blocks, wood laths and wire mesh, using hand tools to cut, shape and assemble sections. Applies clay or other material to surface of frame, to build up model to approximate scale dimensions and form. Shapes surfaces, following drawings, sketches, or verbal instructions, using hand tools, such as scrapers, carvers and spatulas. Scrapes material from high areas and builds up hollows to obtain desired shape. Cuts plastic templates for use as guides to shape symmetrical sections.

May construct relief maps, or architectural models and layouts, using similar materials and methods.

8395-122 MODEL MAKER,POTTERY(cement, stone & clay) DPT:281
GED: 4 SVP: 7 EC: I PA: L 4 7

Carves, shapes and shaves clay, plaster and plastic materials, using any of the following methods, to produce pottery and porcelain-ware models, for making casting moulds:

1. Carves plaster, clay or plastic material, using hand carving tools, contour gauges and calipers. 2. Moulds clay, as it revolves on potter's wheel, with hands and fingers, and smooths surface, using wet sponge and scrapers. 3. Positions rough model in lathe, and guides cutting tool against surface, to shave it to required contours and dimensions.

May prepare working drawings to design specifications, applying knowledge of drafting. May verify dimensions of finished model, using calipers and gauges.

8395-126 PATTERNMAKER, METAL(iron & steel; non-ferrous metal) DPT:281
GED: 4 SVP: 7 EC: I 5 6 PA: M 4 7

Fits, assembles, and finishes castings and parts, to make metal foundry patterns, applying knowledge of patternmaking methods and metal-casting processes:

Studies drawing of part to be cast, computes dimensions, and plans sequence of operations. Dresses castings or metal parts to required shape, dimensions and smoothness, using hand and machine tools. Assembles patterns, using bolts, screws, and other fasteners. Verifies dimensions, clearances, and alignments, using measuring instruments, and makes corrections as necessary.

May make templates for use in inspecting finished surfaces.

8395-130 LOFTSMAN(air & space-craft) DPT:381
GED: 4 SVP: 7 EC: I PA: L 3 4 7

Lays out, on plywood or sheet metal, full-scale outlines and reference points of aircraft structures and parts:

Makes preliminary reduced scale layouts of exterior surface contours, from engineering data and sketches, using drafting instruments, and applying knowledge of drafting and aircraft design. Lays out full-scale drawings of aircraft structures, such as fuselages and wings on plywood or sheet metal, working from preliminary loftings and engineering designs. Prepares tables of full-scale lofted structures for shop use.

8395-134 MODEL MAKER, JEWELLERY(jewellery & precious metal prod.) DPT:381
GED: 4 SVP: 7 EC: I PA: L 4 7

Fabricates metal models of items of jewellery conforming to samples, drawings, or design instructions, for use in making casting moulds:

Lays out design on metal stock, and cuts, bends, and shapes parts, using gas torch and metal working hand tools. Measures parts for conformance to specifications. Hammers, scrapes or smooths surfaces, to produce specified finish. Solders pieces together to assemble completed model.

8395-138 PATTERNMAKER, METAL FURNITURE(furn.) DPT:381
GED: 4 SVP: 7 EC: I PA: M 4 7

Sketches and constructs patterns for use in manufacture of metal-furniture parts:

Draws outline of part on paper or traces it from drawing. Transfers outline onto pattern material, such as metal, plastic or wood, by tracing over lines. Cuts out and trims pattern, using hand and power tools. Assembles pattern sections, using hand tools and welding equipment. Marks identification number or symbol on completed pattern.

8395-142 PATTERNMAKER, PANTOGRAPH MACHINE(mach., weld. & forg.) DPT:381
GED: 4 SVP: 7 EC: I PA: L 4 7

Lays out and cuts plastic patterns for use in pantograph engraving: Establishes reference points on plastic sheet, and computes lay-out dimensions, following drawing or sketch. Marks points and lines on plastic material, using drawing tools, such as straightedge, compass and scribe. Cuts out pattern, using hand and machine-tools. May design and develop engraving pattern layouts.

8395-146 PATTERN MAN, ENVELOPES(paper prod.) DPT:381
GED: 4 SVP: 7 EC: I PA: L 4 7

Draws patterns, compiles data, and prescribes manufacturing specifications for envelopes from customer orders:

Sketches layout and dimensions of envelope on card, using drafting instruments. Selects type of paper and computes number and size of sheets required to fill order. Determines machines, dies, and tools to be used. Compiles set-up data for operations, such as cutting, folding, printing and attaching fastening devices. Determines sequence of manufacturing operations, and prepares process card.

8395-150 TEMPLATE MAKER(any ind.) DPT:381
GED: 4 SVP: 7 EC: I PA: M 3 4 7

Plans and makes templates of paper, plastic, wood and sheet metal, used for laying out reference points and dimensions on metal stock, in the manufacture of fabricated metal products:

Develops lay-out from drawings or work orders, applying knowledge of product design, welding, and allowances for curvature and thickness of metal. Lays out design on template material, using drafting instruments and marking devices. Operates power and hand tools to fabricate templates. Marks identification symbols and work instructions on completed template. Repairs and reworks templates.

May specialize in particular type of product, and be designated accordingly; for example, Template Maker, Shipbuilding(ship & boat bldg.) Template Maker, Structural Steel(struct., plate & ornam. metal)

8395-154 PATTERNMAKER, HAT(garment & fabric) DPT:381
GED: 3 SVP: 7 EC: I PA: L 4 7

Casts plaster mould from sample hat to form pattern for subsequent castings of aluminum die, used in hat production:

Applies lacquer to sample hat to stiffen it. Fills hat with sawdust and caps with wood or plastic insert to maintain rigidity and hat size. Inverts hat and places lengths of thread on surface to facilitate subsequent sectioning of mould. Mixes powder with water to form plaster. Applies plaster to hat to form shell, using large- palette knife and spoon. Removes threads from hat to sectionalize shell. Separates hardened shell from hat and inspects for defects. Joins sections of shell together, using clips. Inverts shell and inserts core in center of shell. Packs plaster between shell and core and allows plaster to harden to form pattern used in casting aluminum die. Whittles, cuts, and scrapes plaster from pattern with hand knife, to achieve specified form and dimensions, measuring and comparing pattern with sample hat, using rule and tape.

8395-158 PATTERNMAKER, PLASTER(air & space-craft) DPT:381
plaster-pattern caster.
GED: 4 SVP: 6 EC: I PA: M 4 7

Fabricates plaster patterns and casts, by any of the following methods, for use in the manufacture of aircraft tools and parts:

1. Studies drawing, sketch or product model, or follows verbal instructions, and constructs frame of approximate size and shape from wood and metal sections, using hand tools. Tacks or ties wire mesh to frame, to provide base for plaster. Mixes and spreads plaster over surfaces, building up contours to required shape. Scrapes high spots and fills hollows, until shape, dimensions and smoothness meet required standards. Verifies dimenions, using measuring instruments. Brushes shellac or similar compound over pattern, to seal and strengthen surface. 2. Brushes release agent over surface of pattern, and spreads and smooths plaster over section from which cast is required. Removes cast when set, and trims surfaces and edges to specifications, using scrapers. 3. Assembles metal or wooden frame around pattern or part, and brushes on releasing agent. Pours plaster into enclosure, using fibre, wire or rods as reinforcements, and allows plaster to set. Removes cast from enclosure, and part from cast. Trims edges and surfaces of cast, using hand tools.

May lay up plastic laminated materials on plaster pattern, to form plastic mould, or to prove pattern for plastic product.

8395-162 PATTERN GATER(iron & steel; non-ferrous metal) DPT:381
GED: 4 SVP: 5 EC: I 7 PA: M 4 7

Fits and fastens metal patterns, gates and risers, to metal matchplates used to make foundry sand moulds:

Cuts strips from metal stock, using hacksaw, to make gates and risers as specified on drawing. Screws patterns, gates and risers to matchplate, to connect each pattern to riser and to main gate, according to specifications. Fills and trims joints, using solder and file, to form smooth continuous surfaces.

8395-166 SHOE-LAST PATTERNMAKER(shoes) DPT:682
last-pattern grader.
GED: 3 SVP: 5 EC: I PA: M 4 7

Cuts out steel master patterns for use in manufacturing shoe lasts, and operates grading machine to cut paper last patterns for all sizes of specified shoe style:

Positions design pattern on steel sheet, scribes line around pattern, and cuts along line with shears or metal cutter to form steel-master pattern. Bolts master pattern to table of grading or sizing machine, and adjusts reduction scale of machine to cut paper patterns of specified size. Inserts cutting tool and stylus into ends of pantograph arm of machine, and starts machine. Turns wheel to advance pattern paper from roll into position under cutter, and positions stylus at starting point against edge of steel pattern. Guides stylus around pattern, observing action of cutter. Compares paper pattern with master to verify reproduction of shape. Repeats machine operations, and readjusts reduction scale of machine, to produce specified number and size of patterns of particular shoe style.

8395-170 LAY-UP MAN, PLASTICS(plastic prod.) DPT:684
caster, plastics.
GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Lays up or casts plastic reproductions of models, patterns and prototype parts:

Examines original to determine sections to be laid up or cast, and assembled to obtain reproduction. Constructs enclosure around selected section, and brushes or sprays section with parting agent. Brushes plastic facing coat over parting agent and mixes plastic resin to proceed by either of the following methods: 1. Brushes thin uniform coat of resin over facing coat, applies sheet of fibreglass cloth cut to approximate size of section and smooths cloth by brushing. Repeats lay-up procedure until specified thickness is attained. 2. Pours plastic resin into enclosure until cast is of specified thickness. Removes lay-up or cast when set, and smooths rough edges, using files, grinders and sanders. Forms base and bracing structure to support cast, using hand tools and adhesive.

May assemble lay-ups or casts to produce complete reproduction.

8395-174 FUEL-TANK-FORM BUILDER(air & space-craft; rubber) DPT:684
GED: 3 SVP: 4 EC: I 4 7 PA: M 3 4 7

Builds forms for use in the manufacture of rubberized fuel tanks, performing any combination of the duties described in the following methods:

1. Brushes inside of mould halves with parting agent. Mixes specified amounts of plaster and water, using portable power mixer, and splashes coating over interior of mould halves. Cuts burlap strips and soaks them in plaster mix, adding retarding agent to delay set. Applies strips to inside of mould halves in specified pattern, until required thickness is built up. Applies stiff plaster mix around fitting openings in form, to reinforce them. Assembles mould halves by tightening thumb screws. Puts hand through openings in mould, and applies plaster-soaked burlap strips around seams to join halves of form. Separates mould halves and removes completed form when set. Trims outside surface and fitting openings of form using plaster, spatula and sandpaper. 2. Brushes inside of mould sections with parting agent. Feeds cardboard into pulverizing machine. Cuts burlap strips to specified sizes, following patterns. Measures and mixes pulverized cardboard, glue and water in specified proportions, using scales and portable mixer. Pours mixture into container of powered sprayer, and sprays inside of mould sections. Places burlap strips, soaked in mixture, in mould sections, and resprays, until required thickness is built up. Places mould sections in oven until form sections are dry, and separates forms from moulds. Assembles form sections, using string and tape. Puts hand through openings in form and joins seams with mixture-soaked burlap strips. Trims outside surface, and fitting openings of form, using plaster, spatula and sandpaper. 3. Lays out cutting, scoring and joining lines on cardboard sheets, using templates and patterns. Cuts form sections from sheets, using handsaw, and scores and grooves fold and join lines, using hand tools. Stamps out openings for fittings, using dies and mallet. Assembles cardboard form by bending, folding, fitting and gluing sections together, using wooden supports. Inserts cardboard ribs in form, and secures and reinforces them with adhesive tapes. Glues on cardboard cover to complete form, and removes wooden supports. Moulds plaster components and glues them to surface of form. Trims surface and joints, and bevels edges, using plaster, adhesive tape, spatula and knife.

8395-178 WAX-PATTERN ASSEMBLER AND REPAIRER(iron & steel; non-ferrous metal) DPT:684
GED: 2 SVP: 2 EC: I PA: M 4 7

Assembles and repairs wax patterns used in lost-wax casting process: Melts edges of wax components, using heated knife or electrically-heated iron, and manually positions and joins components. Repairs defects, such as broken edges, holes and cracks, and smooths surfaces, using wax and heated knife or iron.

8395-182 WAX-PATTERN MOULDER(iron & steel; non-ferrous metal) DPT:685

GED: 2 SVP: 2 EC: I PA: M 4 7

Tends semi-automatic machine that produces wax patterns used in lost-wax casting:

Sprays interior surface of rubber mould with parting agent, using spray gun. Places mould in fixture in bed of machine, and starts machine to inject melted wax into mould. Loosens pattern from mould, using air hose, and opens mould by hand to remove pattern. Inspects pattern and removes excess wax, using knife. Smooths small defects, using gas torch and hand tool. Inserts sprues in patterns to prepare them for casting process.

8395-186 WAX-PATTERN COATER(iron & steel; non-ferrous metal) DPT:687

GED: 2 SVP: 2 EC: I PA: M 4 7

Coats wax foundry patterns with compound to form shell moulds used in lost-wax casting process:

Dips pattern in suspension of silica flour and water, and sifts materials, such as sand or aluminum oxide onto pattern to form coat. Examines pattern for evenness of coating, and smooths surface as necessary, using knife.

Mouldmaking Occupations
8395-200 through 8395-224

8395-200 MODEL-AND-MOULD MAKER, CONCRETE PRODUCTS(cement, stone & clay) DPT:281

GED: 4 SVP: 7 EC: I 7 PA: M 4 7

Constructs models and moulds for use in casting concrete-garden ornaments, furniture and statuary:

Shapes models, following drawings or duplicates originals, by moulding clay or other compounds with hands and hand tools. Sprays parting agent on surface of model. Covers model with layers of plaster or resinated glass cloth, to form shell. Cuts hardened shell with saw, or separates sections where divider strips have been inserted during moulding. Reassembles sections of shell to form mould for concrete castings.

May fabricate lugs and projections on mould sections, so that sections may be clamped together. May mould fibre glass sections on aluminum bases to give rigidity to larger mould. May paint models, using spray gun and brushes.

8395-204 MOULD MAKER(woodworking) DPT:481

GED: 3 SVP: 6 EC: I PA: H 3 4 7

Constructs and repairs wooden forms used to mould brick and tile or concrete mixtures in the manufacture of concrete products:

Constructs new moulds by laying out and marking measurements on boards from engineering drawings, or specifications, and cutting boards to size with handsaw or powersaw. Fits mould sections, using hand tools, power tools or with jointer, and joins sections, using materials, such as wood screws, bolts, clamps and glue. Repairs moulds by removing damaged or worn parts, fashioning new ones and screwing them in place.

May lay out and construct wooden plugs used in making fibre glass moulds that are inserted into casting moulds to create voids. May perform general maintenance carpentry about the plant.

8395-208 TIRE-MOULD REPAIRMAN(rubber) DPT:681

tire-mould dresser.

GED: 3 SVP: 6 EC: I PA: H 4 7

Repairs and refinishes metal tire moulds and changes lettering plates and bead rings:

Repairs nicks, dents and holes in moulds, using ball peen hammer, hand drill, chisels, metal plugs and oxy-acetylene torch. Refinishes repaired area or entire mould with hand-buffing machine and steel wool. Changes bead rings and name plates to correspond with size and ply of tires scheduled to be cured, using wrenches. Cleans equipment, using rags, solvent and steel wool.

May add or remove metal from plates, rings and moulds, using welding equipment and files. May fill in mould lettering with liquid

metal or plugs, buff to smooth finish, and restamp. May maintain inventory of plates, bead rings and moulds.

8395-212 MANNEQUIN-MOULD MAKER(plastic prod.) DPT:684

lay-up man.

GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Builds moulds used to cast articles, such as display mannequins, using either of the following methods:

1. Places hand-made model on bench. Packs clay or plaster around model to level of its horizontal center line. Applies parting agent to exposed surface of model to facilitate later removal of cured mould. Brushes plastic facing coat onto exposed surface of model. Covers initial coating with thin, uniform resin coating. Cuts sheet of fibreglass cloth to approximate surface dimensions of model. Presses cloth sheet onto coated surface and smooths cloth to remove wrinkles and air-bubbles. Applies additional resin coating and fibreglass sheet, repeating laminating procedure until desired thickness of mould is attained. Removes clay or plaster from pattern. Turns pattern over and repeats process to fabricate matching half of mould. 2. Applies parting agent to mould. Constructs enclosure around pattern. Mixes and pours plastic resin into enclosure to surround model to desired depth. Allows resin to set hard. Removes enclosure and cuts hardened cast from model. Files, grinds and cuts cast to specified dimensions, using hand tools.

May use plaster of paris as initial coating agent. May attach drilled metal strips to moulds to facilitate bolting together of mould halves.

8395-216 POTTERY-MOULD MAKER(cement, stone & clay) DPT:684

GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Casts plaster moulds used in manufacturing pottery ware:

Places model in clay so that upper half of model remains exposed. Brushes exposed half with parting agent and places wooden form around model to serve as enclosure. Mixes plaster and pours it over model to form one half of mould. Allows plaster to set, removes wooden enclosure, and turns mould over. Removes clay, leaving model in plaster, and smooths plaster surface at parting line, using knife and scraper. Brushes parting agent on model and plaster surface, and replaces wooden enclosure around sides. Pours plaster over model to form second half of mould.

8395-220 MOULDING SCREEN FORMER(mech. equip., n.e.c.) DPT:684

wire screen former.

GED: 3 SVP: 5 EC: I PA: M 4 7

Manufactures and installs moulding screens for machines which produce pulp stock products, such as egg trays:

Cuts wire mesh into sections of required size, using shears. Selects and sets up forming dies in hydraulic press, using hand tools. Presses wire mesh partially into die by hand. Lowers and raises hydraulic press in progressive stages to gradually form screen mould. Smooths mesh with shaping tools after each stage to remove wrinkles. Cuts seal from rubber sheeting, using scissors and positions seal at mould perimeter in press. Operates press to set rubber seal in wire mesh. Changes screens and suction moulds in pulp-stock-forming machines for product changeover.

May anneal wire mesh by reeling wire cloth through gas furnace and cold water tank, before forming operations.

8395-224 WAX-PATTERN MOULDMAKER(iron & steel; non-ferrous metal) DPT:684

GED: 2 SVP: 3 EC: I PA: L 4 7

Forms rubber moulds for use in machine that produces wax patterns for lost-wax casting:

Places metal model in frame and packs raw rubber around model. Clamps frame in vulcanizing machine. Removes frame from machine after specified time. Splits mould into two pieces and removes model, using knife or scalpel. Inspects mould for defects.

Miscellaneous Occupations
8395-244 through 8395-276

8395-244 JIG AND FORM MAKER(any ind.) DPT:381
GED: 4 SVP: 7 EC: I 6 PA: M 4 7

Builds jigs, fixtures and forms of wood, metal, or plastic materials, for use in assembling or shaping parts of products, such as electrical equipment, motor vehicles, or aircraft:

Examines drawing, part or assembly for which jig, fixture or form is to be built. Lays out design, using shop measuring instruments. Cuts and shapes wood, metal or plastic materials, to specified dimensions, using hand, power and machine tools. Assembles parts to complete jig, fixture or form, and verifies dimensions. Repairs worn or damaged fixtures.

May build holding fixtures for assembly of variety of products by moulding plastic material, using product as pattern.

8395-248 MODEL-AND-MOULD MAKER, PLASTER(cement, stone & clay; misc. prod. fab., n.e.c.) DPT:681
GED: 4 SVP: 7 EC: I 7 PA: M 4 7

Makes plaster models and moulds used to cast concrete or plaster products; such as, cornices, mouldings, decorative panels and columns: Lays out profile of product on sheet-metal, following drawings. Cuts out and trims template of profile, using shears and files, and nails template to wood guide for use on modelling frame. Mixes water and plaster to required consistency in tub, using paddle. Brushes parting agent on modelling frame, to prevent adhesion of plaster. Builds up plaster in or on frame, and incorporates reinforcing fibres, allowing setting time between successive layers. Pushes and pulls template across plaster surface to remove excess, and form model or mould to required contours and dimensions. Cuts hardened model or mould into sections, using handsaw, and lays out sections to form required pattern. Cements sections together, using resinous compound, and fills and smooths joints and surface defects with plaster, using moulding tools.

8395-252 BUTTON DESIGNER AND SAMPLE MAKER(misc. prod. fab.; n.e.c.) DPT:381
GED: 3 SVP: 6 EC: I PA: L 4 7

Designs and fabricates plastic button samples: Determines size, shape, and colour of buttons from customer's order. Prepares coloured designs of buttons, using drawing instruments, colouring and brushes. Selects plastic button blanks according to design specifications. Turns, cuts, drills, sands and buffs plastic blanks into shape of designed button samples, using a variety of machine-tools. Measures buttons to ensure correct specifications, using calipers. Attaches sample of coloured cloth to buttons and forwards them to dyeing room. Examines and approves dyed sample buttons and attaches them to customer's order.

8395-256 PLASTER DIE MAKER(cement, stone & clay) DPT:684
press-die, maker.
GED: 3 SVP: 5 EC: I PA: H 4

Casts plaster dies for hydraulic ram press that forms pottery ware: Places wire mesh over die face of master model and presses or taps mesh with wooden mallet to contour of model. Wires non-metallic conduit to wire mesh. Removes wire mesh assembly and sponges soap solution on model surface to separate die halves after casting. Lowers and taps steel die rings over outside rim of each half of model, using wooden mallet. Places wire mesh assembly over model face and wires assembly to die rings manually. Mixes powdered plaster with water, according to specifications, using hand paddle. Pours mixture into each half of model to top of die ring. Separates die from model and attaches airhose to die to remove water from dies. Removes remaining moisture from die, using sponges and places finished dies in storage rack.

May make master model for use in making dies. May place dies in ram press. May salvage steel rings and wire mesh assembly.

8395-299 OTHER PATTERNMAKERS AND MOULDMAKERS

This group includes patternmakers and mouldmakers, not elsewhere classified; for example, those who fabricate patterns, moulds, models and templates from materials; such as, metal, wood, clay, plastic or plaster, for use in the manufacture of a wide variety of products.

Typical examples of occupational titles covered by this residual group definition are:

Mould Maker(jewellery & precious metal prod.; misc. prod. fab., n.e.c.)

Patternmaker, Plastics(plastic prod.)

8396-INSPECTING AND TESTING OCCUPATIONS, MACHINING, N.E.C.

This unit group includes occupations, not elsewhere classified, in inspecting and testing work as described under the term titles, 02-170 INSPECTOR (any ind.), and 02-430 TESTER (any ind.), concerned with quality-control activities in the machining, engraving, etching, filing, grinding, buffing, cleaning and polishing of various materials and products and in patternmaking and mouldmaking.

8396-110 BALANCING-MACHINE OPERATOR(electric. equip.; mech. equip., n.e.c.) DPT:482
balancer, dynamic.
GED: 4 SVP: 6 EC: I PA: M 4 7

Operates dynamic-balance machine to locate points of imbalance on parts, such as impeller wheels, armatures, rotors and flywheels and corrects imbalance, using machine and hand tools:

Positions workpiece on machine spindle or bearings manually or with crane. Connects power source that rotates workpiece by sliding drive belt over shaft of workpiece or moving drive wheel against workpiece. Starts machine to rotate workpiece at specified speed. Moves controls of machine to locate points of imbalance indicated by light beam from stroboscope on identification marks of workpiece, position of wave crest of trace pattern on oscilloscope screen, or readings on wattmeter and protractor dial. Computes amount of weight to be added or removed from workpiece, or changes size and location of test weight until zero reading is indicated on ammeter. Removes excess material from heavy areas, using drill press, grinder, chisel and hammer or files. Adds weight to light areas by installing metal clips, wedges or rivets or welding or soldering metal on part, using hand and power tools and welding equipment.

8396-114 SAFETY-RAZOR BLADE INSPECTOR(misc. prod. fab., n.e.c.) DPT:684
GED: 3 SVP: 6 EC: I PA: S 4

Inspects safety-razor blades in all stages of manufacture: Inspects incoming material visually to ensure conformity to invoice description. Inspects small parts visually and with measuring instruments, such as micrometers, to ensure that dimensions are within specified tolerances. Inspects strips of blades by measuring physical, mechanical and dimensional properties. Performs destruction tests on random samples of blades to ascertain flexibility and hardness. Inspects blades in blocks of specified number by placing blades on holder under mercury vapor lamp and turning to various angles to reveal defective blades by pattern reflection. Sorts defective blades to determine pattern of defects that could be corrected by machine adjustments.

8396-118 STATIC BALANCER(electric. equip.; mech. equip., n.e.c.) DPT:484
GED: 3 SVP: 3 EC: I PA: H 4 7

Balances parts, such as transportation wheels, grinding wheels, armatures, blower fans and rotors, and corrects imbalance by removing or adding weight at point of imbalance:

Mounts parts without spindles or shafts on mandrels. Positions part on two parallel, level, knife edges or rotates part on two pairs of overlapping, narrow faced rollers. Rolls part and observes point of rest. Removes excess material from heavy areas, using drill press, grinder, chisel and hammer or hand files. Adds weights to light areas by installing metal rivets, clips or wedges, or adding material similar to that of part, using hand and power tools and soldering and welding equipment.

May be designated according to part balanced; for example, Abrasive-Wheel Balancer(mech. equip., n.e.c.)
Armature Balancer(electric. equip.)

Blower-Fan Balancer(mech. equip., n.e.c.)
Rotor Balancer(mech. equip., n.e.c.)

8396-199 OTHER INSPECTING AND TESTING OCCUPATIONS, MACHINING

This group includes machining inspectors and testers, not elsewhere classified; for example, those who inspect engraved or etched materials or inspect or test samples, templates, patterns and moulds made from metal, wood, clay, plastic, plaster or similar materials. Typical examples of occupational titles covered by this residual group definition are:

Inspector, Concrete Moulds(cement, stone & clay)
Inspector, Etched Glass(glass)
Inspector, Etched-Metal Parts(scient. & ind. equip., n.e.c.)

8399-OTHER MACHINING AND RELATED OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with using machines or hand tools to shape, work or join various materials, parts and products according to specifications.

8399-110 AIRCRAFT MECHANIC, EXPERIMENTAL(air & space-craft) DPT:261 GED: 5 SVP: 8 EC: I 6 PA: M 2 3 4 7

Fabricates and assembles experimental structural and mechanical parts and installs them in aircraft, or mock up of aircraft, according to specifications:

Lays out reference points and lines on metal, wood or plastic, using drafting instruments, according to drawings and verbal instructions. Sets up and operates wood and metalworking machines and machine-tools, such as band saw, table saw, lathe, drill press, shear and brake, to make parts and verifies their dimensions, using measuring instruments. Drills, countersinks and reams holes in parts and assemblies for bolts and rivets, using portable power tools. Fits and installs parts and assemblies, using hand tools. Strings cables through guides and pulleys and adjusts cable tensions. Fabricates jigs and fixtures for use in locating and installing parts. Confers with engineers to resolve problems of fabrication and installation.

8399-114 MODEL AND MOCK-UP MAKER(air & space-craft) DPT:261 GED: 5 SVP: 8 EC: I 6 PA: M 2 3 4 7

Constructs scale models and full-scale mock-ups of aircraft from wood, plastic and other materials:

Lays out work to determine lines and contours of model or mock-up according to drawings, rough sketches, lofting data or verbal instructions. Transfers lay-out detail onto wood or plastic materials. Operates shop equipment; such as, band saw, planer, jointer, lathe and drill press to shape and form parts, such as ribs, tailplane and control surface. Constructs fabrication and assembly jigs and fixtures. Grinds, files and sands parts to finish them. Aligns parts and assemblies, using transit and sight level. Fits and joins assemblies, such as wings, fuselage and tail sections, using hand and power tools. Confers with engineers to resolve construction problems.

8399-116 DIE MAKER, PAPERBOARD(mech., equip., n.e.c) DPT:381 GED: 4 SVP: 7 EC: I PA: M 4 7

Constructs dies from sharpened steel-rule stock, and plywood or hardboard, for use in machines that cut or score paperboard:

Lays out die design on plywood or hardboard sheet, following drawing specifications, and using drafting instruments. Saws blocks from sheet, using table, band or jig saws. Sands and polishes blocks to specified dimensions and smoothness, using belt sander. Measures and cuts sharpened steel-rule stock to specified length, using power hacksaw or shears, and bends pieces to form cutting knives and scoring rules. Places die holder on assembly table, positions wooden blocks in die holder, and inserts knives and scoring rules between

blocks according to drawing. Turns bolts on die holder using wrench, to fasten blocks and knives in place. Adjusts setup of die during trial run to compensate for deviation from specifications. May secure blocks and knives in die holder, using wedges.

8399-118 FLOAT MAKER(non-ferrous metal) DPT:484 GED: 3 SVP: 6 EC: I 7 PA: L 4 7

Fabricates and assembles floats used to control flow of molten aluminum from pouring machines:

Lays out float pattern on sheet metal, according to sketches and drawings and cuts marked sheet to form pattern, using hand shears. Bakes asbestos material in oven according to specifications. Removes baked material from oven, applies precut-metal pattern and marks material for sawing by tracing around pattern. Starts band saw and cuts float parts from baked material. Fabricates other parts according to assembly requirements. Verifies specified dimensions, using micrometer. Assembles float according to specifications, using hand tools, such as wrenches and pliers. Records production according to type, size and form of float produced.

8399-120 PORTABLE-DIAMOND-DRILL-AND-SAW OPERATOR (cement, stone & clay; const.) DPT:662 GED: 3 SVP: 6 EC: B 5 6 7 PA: VH 3 4 5 6 7

Operates portable diamond saw and drills to cut and bore masonry and steel to specifications:

Reads work order and talks to client to determine location and nature of assignment. Determines and selects equipment required, such as electric saw, electric, gasoline or air-powered drill, portable generator, water pump and air compressor. Loads equipment on truck at plant and unloads at job site, assisted by other worker. Measures and marks, on masonry or steel, position of hole to be drilled or cut to be made, using steel-tape measure and marking pencil. Selects and fits specified diamond bit into drill or saw blade onto saw, using wrench. Sets up and operates drill or saw following markings on masonry or steel. Records assignments completed and hours worked in log book and on time sheets. Erects scaffolding at site to provide position for boring or sawing, using hand tools. Performs minor repairs and servicing on equipment and delivery truck.

8399-122 BUTTON-MACHINE SET-UP MAN(misc. prod. fab., n.e.c.) DPT:680 GED: 3 SVP: 5 EC: I 5 PA: L 4 7

Sets up machines that shape, drill and cut designs on plastic or wooden buttons:

Selects and installs specified button-holding chucks, abrasive wheels, cutting tools, and drill bits in machine, using hand tools and gauges. Adjusts cams to synchronize feeding mechanism with tool action, and sets cutting tools in holders to control depth of design on button. Selects approximate settings and test-operates machine. Examines and gauges sample button to determine need for further adjustment. Replaces worn or broken machine parts, using hand tools. Operates bench grinder and lathe to sharpen drill bits and cutting tools, and reshape worn button-chucks.

May polish buttons, using tumbling machines or buffing wheels. May instruct new employees in machine tending procedures.

8399-126 SAFETY-RAZOR-BLADE MAKER(metal fab., n.e.c.) DPT:680 GED: 3 SVP: 5 EC: I 6 PA: L 4 7

Sets up and operates machines that produce safety-razor blades from steel strip:

Mounts coil of strip on machine-feed reel, using hoist. Threads strip through successive grinding, honing and stropping sections of machine. Starts and stops machine to examine result produced by each section, using microscope. Adjusts and sets machine grinders, hones and stropps, to ensure conformance to standards. Adjusts device that prints trade mark. Observes dial thermometers and adjusts controls of heat-treating furnace to maintain specified temperature. Replaces worn grinders, hones and stropps as required.

May operate machine that divides processed strip into individual blades, and finishes edges, and be designated accordingly, Safety-Razor-Blade Honer.

**8399-130 PORTABLE-DIAMOND-DRILL-AND-SAW
OPERATOR HELPER**(cement, stone & clay; const.)
DPT:687

GED: 2 SVP: 2 EC: B 4 5 6 7 PA: VH 3 4 5

Helps operator to bore or saw holes in masonry and steel:
Loads, unloads and carries equipment from truck to work site. Mixes and pours gasoline and oil into equipment fuel tanks. Fills water pump from tap and connects pump to drill. Pumps water manually during drilling operation. Connects portable generator to electric drill or saw. Turns generator crank manually to provide power for electric drill or saw. Holds drill or saw steady to obtain initial penetration. Cleans equipment and work area. Performs minor repairs to equipment or truck. See also definition for term title, 02-160 HELPER (any ind.).

May drive delivery truck to work site. May help operator to erect scaffolding.

**8399-199 MISCELLANEOUS MACHINING AND RELATED
OCCUPATIONS**

This group includes miscellaneous machining occupations, not elsewhere classified; for example those who use machines or hand tools to shape, work or join various materials, parts and products to specifications. A typical example of an occupational title covered by this residual group definition is:

Shallot Maker(mach., weld. & forg.)

PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS

This major group includes occupations concerned with using manufactured components and assemblies to produce or repair products; such as, automobiles, airplanes, and marine craft, industrial and agricultural machinery, commercial and business machines, domestic appliances, precision instruments, electrical and electronic equipment, rubber and plastic products, garments, footwear, furniture, housewares, and jewellery, by assembling them in a factory, shop, or yard. Activities include: final working, fitting and finishing of parts and assemblies to complete fabrication, installation and repair of finished products or equipment. Occupations primarily concerned with inspecting, testing, grading, and sampling activities related to the fabrication, assembly, installation and repair of products are classified in special unit groups for inspecting, testing, grading, and sampling within the applicable minor groups. Occupations concerned with assembling and repairing marine craft are classified in Unit Group 8592, MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS. PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS are classified in the following minor groups:

- 851/852 Fabricating and Assembling Occupations,
Metal Products, n.e.c.
- 853 Fabricating, Assembling, Installing and
Repairing Occupations: Electrical,
Electronic and Related Equipment
- 854 Fabricating, Assembling and Repairing
Occupations, Wood Products
- 855/856 Fabricating, Assembling and Repairing
Occupations: Textile, Fur and Leather
Products
- 857 Fabricating, Assembling and Repairing
Occupations, Rubber, Plastic and Related
Products
- 858 Mechanics and Repairmen, n.e.c.
- 859 Other Product Fabricating, Assembling
and Repairing Occupations

851/852-FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

This minor group includes occupations, not elsewhere classified, concerned with fabricating and assembling a wide variety of products, primarily made of metal, and mechanical equipment designed for domestic, commercial, industrial, construction, agricultural or other uses. Activities include: fabricating and assembling motor vehicles; aircraft; railway rolling stock; engines and related equipment; industrial, farm and construction machinery; business and commercial machines; precision instruments; armament equipment; and other related products. MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS are classified in Unit Group 8592. FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C. are classified in the following unit groups:

- 8510** Foremen, Fabricating and Assembling
Occupations, Metal Products, n.e.c.

- 8511** Engine and Related Equipment Fabricating and Assembling Occupations, n.e.c.
- 8513** Motor Vehicle Fabricating and Assembling Occupations, n.e.c.
- 8515** Aircraft Fabricating and Assembling Occupations, n.e.c.
- 8523** Industrial, Farm, Construction and Other Mechanized Equipment and Machinery Fabricating and Assembling Occupations, n.e.c.
- 8525** Business and Commercial Machines Fabricating and Assembling Occupations, n.e.c.
- 8526** Inspecting and Testing Occupations, Fabricating and Assembling Metal Products, n.e.c.
- 8527** Precision Instruments and Related Equipment Fabricating and Assembling Occupations, n.e.c.
- 8528** Occupations in Labouring and Other Elemental Work, Fabricating and Assembling Metal Products, n.e.c.
- 8529** Other Fabricating and Assembling Occupations, Metal Products, n.e.c.

8510-FOREMEN, FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

This unit group includes occupations, not elsewhere classified, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in fabricating and assembling a wide variety of metal products and mechanical equipment designed for use in domestic, commercial, industrial, construction, agricultural or other activities.

8510-110 FOREMAN, AIRCRAFT ASSEMBLY(air & space-craft) DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating and assembling aircraft, air or space-craft subassemblies; such as, power plants, landing gear, tail assemblies and wings and related equipment in a shop or on a production line, normally using manufactured parts and components, (Unit Group 8515):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in fabricating and assembling a particular part or type of aircraft and be designated accordingly; for example,

Aircraft-Hydraulic-Equipment Installation Foreman
Aircraft-Rigging Foreman
Airframe Assembly Foreman
Helicopter Assembly Foreman
Power-Plant Installation Foreman
Space-Craft Subassemblies Foreman

8510-114 FOREMAN, BUSINESS AND COMMERCIAL MACHINES ASSEMBLY(mech. equip., n.e.c.)

DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating and assembling a variety of business and commercial machines; such as, typewriters, calculating, bookkeeping, adding, copying and similar business machines, punched card and vending machines, normally using manufactured parts and assemblies, (Unit Group 8525):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in fabricating and assembling a particular type of machine and be designated accordingly; for example,

Adding-Machine Assembly Foreman
Addressing-Machine Assembly Foreman
Bookkeeping-Machine Assembly Foreman
Calculating-Machine Assembly Foreman
Cash-Register Assembly Foreman
Copying-Machine Assembly Foreman
Postage-Meter Assembly Foreman
Punched-Card-Machine Assembly Foreman
Typewriter Assembly Foreman
Vending-Machine Assembly Foreman

8510-118 FOREMAN, ENGINE ASSEMBLY(mech. equip., n.e.c.)

DPT:138

Supervises and co-ordinates the activities of workers engaged in fabricating and assembly of engines, power transmissions and mechanical accessories for installation in transport vehicles, construction, agricultural or other mechanical equipment, (Unit Group 8511):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in rebuilding engines and allied equipment to specification, using new or reworked parts. May supervise workers engaged in fabricating and assembling a particular type of engine or equipment and be designated accordingly; for example,

Aircraft-Engine Assembly Foreman
Diesel-Engine Assembly Foreman
Engine-Accessories Assembly Foreman
Engine-Rebuilding Shop Foreman
Outboard-Motor Assembly Foreman
Power-Transmission Assembly Foreman
Small-Engine Assembly Foreman
Transmission-Rebuilding Shop Foreman

8510-122 FOREMAN, INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY ASSEMBLY(mech. equip., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating and assembling industrial machinery; such as, printing presses, textile manufacturing equipment, turbines and steam generators, farm equipment and agricultural machinery, heavy construction equipment, railway rolling stock, snow vehicles and lawn mowers, and material handling equipment. (Unit Group 8523):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in fabricating and assembling a particular type of machinery or equipment and be designated accordingly; for example,

Agricultural-and-Farm-Equipment Foreman
Construction-Machinery Assembly Foreman
Hoisting-and-Lifting-Equipment Assembly Foreman
Locomotive-Erecting Shop Foreman
Metal-and-Woodworking-Machinery Manufacturing Foreman
Printing-Equipment Assembly Foreman
Railway-Rolling-Stock Manufacturing Foreman
Snowmobile Assembly Foreman
Textile-Machinery Assembly Foreman
Turbine Assembly Foreman

8510-126 FOREMAN, METAL PRODUCTS INSPECTION AND TESTING(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in inspecting and testing activities in the fabrication and assembly of metal products; such as, aircraft, motor vehicles, engines and accessories, agricultural equipment, and scientific testing and control equipment. (Unit Group 8526):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in inspecting and testing various types of metal products and be designated accordingly; for example,

Aircraft-Assembly Inspection Foreman(air & space-craft)
Clock-and-Watch Inspection Foreman(scient. & ind. equip., n.e.c.)
Engine Testing Foreman(mech. equip., n.e.c.)
Farm-Machinery Inspection Foreman(mech. equip., n.e.c.)
Motor-Vehicle Inspection and Testing Foreman(motor vehicle)

8510-130 FOREMAN, MOTOR VEHICLE ASSEMBLY(motor vehicle) DPT:138

Supervises and co-ordinates the activities of workers engaged in fabricating and assembling motor vehicles, trailers, subassemblies and parts, other than engine accessories, on a factory production line utilizing manufactured parts and assemblies. (Unit Group 8513):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in fabricating and assembling a particular type of vehicle and be designated accordingly; for example,

Automobile Assembly Foreman
House-Trailer Assembly Foreman
Mobile-Home Assembly Foreman
Truck Assembly Foreman
Truck-Trailer Assembly Foreman

8510-134 FOREMAN, PRECISION INSTRUMENTS AND RELATED EQUIPMENT ASSEMBLY(scient. & ind. equip., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating and assembling precision instruments and related equipment; such as, scientific and optical instruments, measuring, indicating and controlling instruments and equipment, surgical, medical and dental instruments and apparatus, photographic equipment, timepieces, and similar items, (Unit Group 8527):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in fabricating and assembling a particular type of instrument or equipment and be designated accordingly; for example,

Clock-and-Watch Assembly Foreman
Controlling-and-Recording-Instruments Assembly Foreman
Optical-Instruments Assembly Foreman
Photographic-Equipment Assembly Foreman
Scales-and-Weighing-Equipment Assembly Foreman
Solenoid-Valves Assembly Foreman
Thermostats Assembly Foreman

8510-199 OTHER FOREMEN, FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS

This group includes foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in fabricating and assembling metal products; such as, metal furniture, bicycles, roller bearings and firearms. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Assembly Department(struct., plate & ornam. metal)
Foreman, Baby-Carriage Assembly(mech. equip., n.e.c.)
Foreman, Ball-and-Roller-Bearings Assembly(mech. equip., n.e.c.)
Foreman, Bicycle Assembly(mech. equip., n.e.c.)
Foreman, Firearms Assembly(metal fab., n.e.c.)
Foreman, Metal-Furniture Assembly(metal fab., n.e.c.)

8511-ENGINE AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with fabricating and assembling engines, transmission systems and mechanical engine accessories; such as, water pumps, radiators, and carburetors for use in transport conveyance and construction, agricultural or other mechanized equipment. Activities include: fitting, pressing, bolting and aligning to install parts, components or accessories; and adjusting fabricated or assembled equipment, using common or special hand and power tools and equipment. Includes occupations concerned with rebuilding engines to specifications, using new or reworked parts. Occupations concerned with repairing installed engines are classified in Minor Group 858, MECHANICS AND REPAIRMEN, N.E.C. Occupations concerned with installing and repairing marine engines are classified in Unit Group 8592, MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS. Occupations concerned with fabricating and assembling electrical engine accessories are classified in Unit Group 8531, ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS.

8511-110 TURBINE FITTER(mech. equip., n.e.c.) DPT:281 turbine assembler.

GED: 4 SVP: 8 EC: 1 5 PA: H 2 3 4 7

Builds steam or gas turbines and subassemblies by fitting and assembling machined parts and castings:

Assembles blades, disks, spacers, shafts and casing to build compressor and turbine spindles, and stator assemblies, using drawings, fixed and dial gauges, and hand tools. Erects and aligns bedplate structure, using level, transit and straightedge. Lays out and drills mounting

holes. Grinds and files welds on turbine casing to obtain specified clearances and finishes. Fits and aligns bearings, spindles, casings, exhaust ducting, oil cylinders and pumps, to specifications, using hand tools and hoist. Cuts, threads, and installs, oil, fuel or steam lines. Bolts, dowels and lock-wires nuts to assemble parts. Dismantles and rebuilds worn or damaged turbines and subassemblies. May balance spindles, using vibroscope or balancing machine.

8511-114 INTERNAL-COMBUSTION-ENGINE ASSEMBLER(mech. equip., n.e.c.) DPT:481
engine fitter.
GED: 3 SVP: 5 EC: 1 PA: M 4 7

Fits and assembles internal-combustion engines and subassemblies to specifications, at bench or on assembly floor:

Fits keys and assembles gears, pulleys, flywheels, bearings and bushings, using arbor press or hand tools. Positions crankshaft and camshaft in bearings, and tightens bearing caps, using hand tools or impact wrenches. Fits piston assemblies into cylinders, and bolts them to crankshaft. Fits and installs gaskets, and subassemblies; such as, cylinder heads, camshaft assembly, fuel, oil and water pumps, distributor and carburetor, to specifications, using torque wrench, hand tools and gauges. Fits and installs tubing for fuel, lubrication and cooling systems. Aligns engine parts, sets clearances and timing, to specifications, using dial indicator, timing light and feeler gauges. Examines parts and completed assemblies for defects and disassembles, or replaces parts as required.

May specialize in particular area of engine assembly, or subassembly, or type of internal-combustion engine, and be designated accordingly; for example,

Air-Cooled-Engine Assembler
Cylinder-Head Assembler
Diesel-Engine Assembler
Gasoline-Engine Assembler
Outboard-Motor Assembler

8511-118 AUTOMOTIVE-PRODUCTION FITTER(motor vehicle) DPT:682
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Machines and fits internal-combustion engine components, on production line:

Operates boring, reaming and honing machines to finish cylinders and valve-guide holes to specified size. Verifies finished size with dial and fixed gauges. Seats bushings on shafts or in bearing housing, and valve guides in engine block, using press. Operates grinding machine to grind and seat valves in engine block or cylinder head.

May build cylinder-head or piston assemblies, using semi-automatic assembly machines. May specialize in seating valves and be designated accordingly, Valve Seater

8511-122 CLUTCH REBUILDER(motor vehicle) DPT:684
GED: 3 SVP: 3 EC: 1 5 PA: H 4 7

Rebuilds motor vehicle clutches by performing one or more repetitive bench assembly operations:

Disassembles clutch, using hand tools. Removes grease and rust from parts, using degreasing machine and shot blasting equipment. Inspects and regrinds clutch pressure plates, using micrometer and surface grinder. Tends riveting press to replace clutch plate facings. Reassembles clutch, using jig, and replaces worn or damaged clutch parts as required. Adjusts operational limits of clutch assemblies to specifications, using hand tools and dial indicator. Inspects and adjusts balance of clutch assembly, using dynamic balancing machine.

May be designated according to operation performed; for example, Clutch Balancer
Clutch-Plate Grinder
Clutch Preassembler

8511-126 GEARED-AUTOMOTIVE-COMPONENTS ASSEMBLER(motor vehicle) DPT:684
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Assembles geared automotive components, such as transmissions and differentials at bench or on assembly line by performing any combination of the following duties:

Fits gears, pinions, bearings and spacers on shafts, manually or using hydraulic assembly press. Positions shafts and gear clusters in

gearcase, using hand tools and assembly press. Measures and adjusts gear alignment and backlash, using micrometers, gauges and hand tools. Bolts sections of gearcase together, using hand and power tools. May specialize in assembling a particular geared automotive component and be designated accordingly; for example, Differential Assembler
Steering-Box Assembler
Transmission Assembler

8511-130 AUTOMOTIVE-ENGINE-ACCESSORIES ASSEMBLER(motor vehicle) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Assembles automotive engine accessories; such as, fuel pumps, water pumps, carburetors, and clutches, working at bench or on assembly line by performing one or more of the following repetitive duties:

Positions parts in specified relationship to each other, using hands, tweezers or fixtures. Bolts, screws, solders, welds, press-fits, crimps, rivets or otherwise fastens parts together, by hand or using hand tools, power tools, spot welder, assembly press or riveting machine. Verifies operation and alignment of parts, using test equipment, gauges and micrometers. Adjusts parts as required, using hand tools.

May specialize in assembling a particular automotive component and be designated accordingly; for example,

Carburetor Assembler
Clutch Assembler
Fuel-Pump Assembler
Water-Pump Assembler

8511-134 ENGINE ASSEMBLER, PRODUCTION LINE(mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 3 4 7

Assembles internal-combustion engine components by performing repetitive, short-cycled duties on an assembly line:

Positions one part; such as, piston or cylinder-head assembly, fly-wheel, crankshaft or oil-pan as engine block moves past on belt conveyor. Starts bolts in threaded holes. Tightens preplaced belts, using multiple-head impact wrenches. Positions and glues gaskets. Installs or removes conveyor hooks in engine blocks. Seals parts with masking tape and positions engines in storage racks.

May oil and grease engines.

8513-MOTOR VEHICLE FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with fabricating and assembling entire motor vehicles, trailers, subassemblies, and parts other than engine accessories; such as, brakes, bumpers, shock absorbers, and windshield wipers, on a factory production line utilizing manufactured parts and assemblies. Activities include: fitting, bolting and riveting to install parts, engines or other components; and adjusting fabricated or assembled components using common or special hand and power tools or equipment. Occupations concerned with fabricating or assembling engine accessories are classified in Unit Group 8511, ENGINE AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C. Motor vehicle repairing occupations are classified in Unit Group 8581, MOTOR VEHICLE MECHANICS AND REPAIRMEN.

8513-110 AUTOMOTIVE BUILDER(motor vehicle) DPT:381
GED: 4 SVP: 7 EC: 1 5 6 PA: H 2 3 4 7

Builds passenger buses or trucks, by performing any combination of the following duties:

Studies blueprints, drawings and work orders to determine assembly procedure. Moves or directs movement of heavy parts and units into position, using hoist or crane. Drills holes in parts, following layout marks and using portable power drill. Fits, bolts, screws, rivets or welds together parts; such as, frame, panels, bulkheads, braces, ductwork and doors, to build vehicle. Installs engine, transmission, fuel tank and other units, using hoist, hand tools and gauges. Installs

hydraulic pumps, valves and prebent piping, using hand tools. Press-fits bearings, installs brakes, and mounts wheels and tires, using arbor press, hand tools and power tools. Installs electrical wiring, lights, signals, fans and other accessories, using hand tools. Cuts and installs linoleum or carpeting, using patterns, knife and adhesives. Installs and adjusts glass windows, and cements rubber stripping in place. Bolts prefabricated seating into position. May specialize in assembly of buses and be designated accordingly, Coach Assembler

8513-114 TRUCK-TRAILER BUILDER(motor vehicle)

DPT:381

GED: 4 SVP: 6 EC: I 5 PA: H 2 3 4 7

Builds truck bodies and trailers according to specifications, by performing any combination of the following duties, using hand tools and power tools:

Lays out dimensions on sheet metal, aluminum, wood, fibreglass or angle iron, using measuring instruments, such as square, rule, punch and templates. Marks and cuts openings in sheeting and installs support framing around openings. Fits and assembles doors, handles, hinges and catches. Welds, glues, bolts or rivets together body parts and cross-braces, using hand tools, welding apparatus and riveting gun. Installs insulating material between framing and outer plates of doors and catches. Measures and cuts wood stock and installs wood floors and fixtures.

May install electrical wiring for dome, tail and brake lights, and other equipment according to specified procedures. May spray or brush primer, paint or protective coating on wood and metal surfaces. May specialize in building truck bodies and be designated accordingly, Truck-Body Builder

8513-118 TRAILER FINISHER, EXTERIOR(motor vehicle)

DPT:684

GED: 3 SVP: 5 EC: I 5 PA: M 3 4 7

Installs metal panels, mouldings, exterior parts and accessories on frames and bodies for mobile homes, motor homes, travel trailers, camping trailers and similar trailers:

Lays out window, door and vent areas on sheet metal panels, using pencil and ruler. Cuts openings, using electric router and tin snips. Trims panels to shape of vehicle, using router or snips. Positions and fastens panels on body frame, using rule, power drill, stapler and screwdriver. Sets prefabricated window units, screens and louvers in openings, and fastens them in place with screws or rivets. Measures, cuts and installs corner moulding strips, using hand tools. Fastens metal thresholds and doorcasings on body frame, hangs doors, and attaches weather stripping, doorsteps, striker plates and mouldings. Applies sealer compound around window, doors and vent areas, using caulking gun.

May install accessories; such as, visors, lights, brackets and railings.

8513-122 TRAILER FINISHER, INTERIOR(motor vehicle)

DPT:684

GED: 3 SVP: 4 EC: I 5 PA: M 3 4 7

Assembles and installs internal fixtures; such as, doors, cabinets, shelves, panels, flooring and trim, in mobile homes, motor homes, travel trailers, camping trailers and similar trailers, by performing any combination of the following duties:

Uncrates materials and inspects them for surface defects, such as dents, scratches and breakage. Lays carpeting, floor covering and padding, using hammer, tacks, scissors and glue. Lays tile blocks, using sander, trowel, linoleum knife and tile roller. Installs precut panels of wood, aluminum or stainless steel for walls and ceilings by drilling holes and screwing or cementing them to framing, according to drawings. Inserts insulating material between inside and outside panelling and between flooring. Assembles and installs cabinets, closets, interior doors and shelves by gluing and fitting joints or precut parts, and fastening them with nails in locations shown on drawings. Positions and screws metal and wood moulding around sink tops, cabinets, carpeting and wall panels. Installs hardware; such as, door lock assemblies, hinges, rods, racks and holders, using templates, hand tools and power tools. Attaches metal and rubber stripping for doors and windows. Installs plumbing fixtures and connects water supply and drainage, using wrenches. Positions and secures appliances, such as refrigerators and stoves, with bolts and screws, using hand tools. Connects fuel lines to cooking and heating units. Connects wiring to electrical appliances, using screwdriver and pliers.

8513-126 TRAILER-FRAME ASSEMBLER(motor vehicle)

DPT:684

GED: 3 SVP: 3 EC: I 5 PA: H 3 4 7

Assembles and erects floor, wall, and roof frames to construct shells for mobile homes, motor homes, travel trailers, camping trailers, and similar trailers:

Positions precut frame members in jigs, and nails, rivets or staples members together to assemble wall, floor, and roof sections. Nails wheel wells and insulation board to floor frame, and installs chassis brackets for wheel assembly, using impact wrench. Sprays undercoating compound on floor frame with spray gun. Erects side, end and roof sections, using hoist, and fastens sections to floor frame, using rivet gun, screwdriver, and hammer. Glues and nails plywood sheets to floor frame, and attaches wood panelling to side walls, using brush, glue, rivet gun, and hammer. Measures and cuts heat register openings in panels, using rule and powersaw. Sands floor, spreads on mastic, and lays tile blocks to finish floor, using sander, trowel, linoleum knife, and tile roller.

May install carpeting, using scissors, hammer, and tacks.

8513-130 ASSEMBLER, CONVERTIBLE TOP(motor vehicle)

DPT:684

trimmer, soft top.

GED: 2 SVP: 2 EC: I PA: M 3 4

Installs fabric on metal frames for use as automobile convertible tops: Places preassembled metal frame on fixture that holds it in raised position. Stretches and fits fabric sections; such as, padding, weather stripping, back curtain, and top on frame, by hand. Aligns corners and edges of fabric with location marks on frame. Fastens fabric in position, using staples, screws, or glue. Staples cover-up trim over seams to conceal them, using staple gun.

8513-134 AUTOMOTIVE ASSEMBLER(motor vehicle)

DPT:684

GED: 2 SVP: 2 EC: I 5 PA: M 4

Assembles automobiles, trucks or buses, working at one station of progressive assembly line, performing any combination of the following repetitive tasks, using hand tools, power tools, spot welders and production fixtures:

Bolts, screws, welds, clips or otherwise fastens parts together to form subassemblies; such as, doors, seats, dashboards, steering columns and axle units. Positions and fastens together parts and subassemblies; such as, frames, engines, transmissions, axle units, bodies, exhaust systems and hardware to assemble vehicles. Performs simple fitting and adjustment, using hand tools. Seals joints and seams, using caulking gun. Sprays undercoating onto chassis and vehicle underbody. Installs prepared soft trim; such as, door panelling, headliners, carpeting and rubber mats. Bolts or snaps seating into position. Verifies and adjusts front-end alignment, using testing machine, hand tools and power tools. Pours in oil, brake fluid and coolant.

May be designated according to component assembled or installed; for example, Axle Assembler, Body Assembler, Chassis Assembler, Headliner Installer

8513-138 FITTER AND ADJUSTER(motor vehicle) DPT:684 line-up man.

GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Fits and adjusts doors, hoods and trunk lids on automobile, bus or truck bodies so they will swing freely and close tightly:

Opens and shuts doors, hood or trunk lid to test alignment. Observes and feels movement of doors, hood or trunk lid to determine amount of adjustment needed. Adjusts alignments, using prying tools, screwdrivers or rubber hammers.

8513-142 LEAF-SPRING ASSEMBLER(motor vehicle)

DPT:684

GED: 2 SVP: 2 EC: I 5 PA: M 4

Assembles leaf-springs for vehicles, by performing any combination of the following duties:

Inserts pin through prepunched center holes in leaves to align them

lengthwise. Compresses leaves in vise. Removes pin and inserts and tightens bolt, using impact wrench. Installs clips on assembled leaf-springs by bolting U-shaped clip on springs, or positioning clip and spring in holding device. Hammers clip around spring; or positions clip in holding die, aligns spring over clip, and starts press that automatically clenches clip around spring. May spread grease over surface of leaf-springs by hand or with greasing apparatus.

8513-146 WHEEL-ASSEMBLY INSTALLER, TRAILER(motor vehicle) DPT:687
GED: 2 SVP: 2 EC: 1 PA: H 3 4

Fastens wheel assembly to trailer frame, and mounts wheels and tires on axles in manufacture of mobile homes and travel trailers: Positions chassis brackets of floor frame over wheel assembly, using chain hoist. Bolts wheel assembly to chassis frame, using hand or power wrench. Mounts wheels and tires on axles and secures nuts. Bolts front wheel jack to trailer frame. Attaches electromagnetic controls to brake housing and threads wires through holes in frame. Lubricates wheel and axle assembly, using grease gun. May spray frame and chassis with undercoating material, using spray gun.

8513-199 OTHER MOTOR VEHICLE FABRICATING AND ASSEMBLING OCCUPATIONS

This group includes motor vehicle fabricators and assemblers, not elsewhere classified; for example, those who assemble all-terrain vehicles, dune buggies, go-carts and golf-cars, and assemble parts other than engine accessories, such as shock absorbers. A typical example of an occupational title covered by this residual group definition is:
Go-Cart Assembler(motor vehicle)

8515-AIRCRAFT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with assembling aircraft and aircraft subassemblies such as power plants, undercarriages, tails and wings, normally utilizing manufactured parts and components. Activities include: fitting, bolting, riveting and adjusting fabricated or assembled equipment, using common or special hand and power tools, and jigs and fixtures. Aircraft repairing occupations are classified in Unit Group 8582, AIRCRAFT MECHANICS AND REPAIRMEN. Aircraft engine assembling occupations are classified in Unit Group 8511, ENGINE AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.. Occupations concerned with assembling and installing aircraft instruments are classified in Unit Group 8527, PRECISION INSTRUMENTS AND RELATED EQUIPMENT, FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.. Occupations concerned with fabricating, assembling, installing and repairing electrical and electronic aircraft equipment are classified in Minor Group 853, FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS, ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT.

8515-110 TAPE-CONTROLLED-RIVETING-MACHINE OPERATOR (air & space-craft) DPT:380
GED: 4 SVP: 6 EC: 1 5 PA: L 4 7

Sets up and operates tape-controlled riveting machine that automatically drills, countersinks, dimples and rivets aircraft parts and structures, such as wing panels and fuselage sections: Reads drawings, production orders and material specifications to organize material and determine set-up and operating procedure. Positions parts to be assembled in jig on machine table, using hoist. Installs tools, such as drill bit, countersink and rivet shaver in machine spindles, using hand tools. Locates part on carriage table at correct starting point, by operating machine controls. Installs perforated-film

control tape over reading mechanism in control cabinet to automatically regulate indexing of spindles, rivet spacing, raising and lowering of spindles, and longitudinal and transverse movement of carriage. Selects correct rivet fingers according to specifications and fills hopper with proper rivets. Starts machine and makes test run. Measures riveted assembly for conformance to specifications using micrometers and other measuring devices. Adjusts machine as required to obtain accurate results. Presses button to transfer machine to full tape control. Monitors machine performance to detect equipment malfunction and replaces cutting tools when necessary.

8515-114 AIRCRAFT RIGGER(air & space-craft) DPT:381
aircraft mechanic, rigging and controls.
GED: 4 SVP: 6 EC: 1 PA: M 3 4 7

Installs, adjusts and secures flying and power plant mechanical controls, such as cables, torque-tubes and rods, in aircraft: Drills, countersinks and reams holes in structural members using jigs, fixtures and power tools, in accordance with drawings and rigging diagrams. Screws and bolts pulleys, guides, brackets, bearing supports and related fittings in position, using hand and power tools. Threads cables through guides and around pulleys, and attaches cable ends to control levers, structural members and mechanical assemblies, using bolts, clamps and turnbuckles. Installs control rods and torque-tubes, and attaches ends to levers and control-arms, using bolts, yokes and yoke-pins. Turns tie-rod ends and turnbuckles to adjust length of rods and cables, and to adjust and co-ordinate degree and direction of travel of flying control surfaces, using measuring instruments such as inclinometers and scales. Verifies specified tension of cables using tensiometer. Secures and locks all control-mechanism attachments with wire, cotter pins or other prescribed fasteners.

8515-118 AIRFRAME ASSEMBLER(air & space-craft) DPT:381
airframe final assemblyman; airframe fitter.
GED: 4 SVP: 6 EC: 1 5 PA: M 2 3 4 7

Assembles airframe by fitting together subassemblies such as fuselage, wing and tail sections and landing gear: Locates and aligns assembly reference points and holes, using jigs and templates, or calculates relative positions from pre-marked or known station lines and index points using tape, scales and square. Cuts, files, drills and reams metal, plastic and rubber of assembled units to prepare them for fitting and fastening, using hand and power tools. Bolts and screws brackets, pulleys and flaptracks in position, using wrenches and screwdrivers. Aligns and fits fuselage sections and wing and tail assemblies, using hoists or cranes to position them. Bolts, clamps and rivets assemblies together, using hand and power tools. May verify fit, clearance and alignment of assembled components, using measuring instruments such as gauges and micrometers.

8515-122 ASSEMBLER-INSTALLER, AIRCRAFT POWER PLANT(air & space-craft) DPT:381
GED: 4 SVP: 6 EC: 1 PA: M 2 4

Fits auxiliary components to engine to make power plant, and installs power plant in aircraft: Removes engine container and bolts mounts to engine, using torque wrench and locking devices. Mounts engine in stand, using hoist, and makes visual inspection for transportation damage. Cleans protective coatings from surfaces, using solvent. Bolts and clamps auxiliary components such as generators, starters, pumps, fire detectors and thermocouples, and connects piping and flexible hoses, using hand tools. Tightens nuts and bolts to specified torque, and locks them with specified fasteners. Clamps electrical harness in position and connects cables to terminals of electrical components, using wrenches and fasteners. Hoists power plant into position for installation in aircraft, and bolts and locks engine mounts. Clamps or screws connections of wiring system, fuel and oil lines, pressure and other gauges, and engine control rods and cables, to corresponding fittings on aircraft. Adjusts engine controls by turning fittings to lengthen or shorten rods or cables, using wrenches. May specialize in assembly or installation of power plant, or specific type of power plant, and be designated accordingly; for example, Engine and Propellor Mechanic
Power Plant Assembler
Power Plant Mechanic

8515-126 INSTALLER, HYDRAULIC(air & space-craft) DPT:381
aircraft mechanic, plumbing and hydraulics.
GED: 4 SVP: 6 EC: 1 PA: M 3 4 7

Lays out, assembles, installs, and tests hydraulic and pneumatic systems in aircraft:

Lays out location of units and assemblies such as pumps, valves, reservoirs, actuating mechanisms, and tubing and piping systems, following detailed drawings and specified procedures, and using scale, tape and chalk. Drills mounting holes in frames, and screws or bolts units and assemblies to structures, using hand and power tools, and parts such as brackets, clips and braces. Installs and connects tubing and piping, using fittings and wrenches, and locks bolts and unions with wire, cotter pins or other approved devices. Turns setscrews and locknuts to set relief valves, and to adjust travel of actuating cylinders. Performs functional tests of systems, using test stand equipment, and observes that operating pressures are as specified. Rectifies leaks and malfunctions, and refills and bleeds systems as required.

8515-130 AIRCRAFT FITTER-ASSEMBLER, BENCH(air & space-craft) DPT:681
bench fitter mechanic.
GED: 4 SVP: 5 EC: 1 PA: L 4 7

Fits and assembles parts to make aircraft components such as struts, torque-tubes, control linkages, actuators, and wheel assemblies:

Selects, inspects and measures parts to ensure conformance to drawings and production orders. Drills, reams and taps holes, and files, fits, aligns, and bolts parts together, using jigs and fixtures to facilitate assembly, and to set and verify measurements. Tightens and locks bolts and nuts to specification, using torque-wrench, and wire or other specified fasteners. Assembles pivot pins, rollers, pulleys, and fittings such as grease nipples, and applies lubricant by hand or power gun. Installs bushings, bearings and seals, using mechanical or hydraulic press. Verifies operation of assembled units as specified, using test equipment and measuring instruments, and reworks or replaces components to correct malfunction.

May specialize in fitting and assembling hydraulic and pneumatic components and be designated accordingly; for example, Hydraulic Component Assembler

8515-134 METAL-BONDING EQUIPMENT OPERATOR(air & space-craft) DPT:682
GED: 4 SVP: 5 EC: 1 PA: M 4 7

Operates heated-platen presses and autoclaves to bond flat, curved or contoured metal parts for aircraft:

Reads drawings and shop orders to determine bonding specifications, and examines parts for cleanliness and fit of mating surfaces. Prepares parts for assembly and bonding by brushing liquid adhesive on bonding surfaces, or by stripping protective coating from precut sheet adhesive for placement between bonding surfaces. Bonds parts using either of the following methods. 1. Assembles flat parts on conveyor table of heated-platen press, using aluminum shims to ensure even distribution of pressure. Installs thermocouples in press at critical points, using wrench, and connects thermocouple leads to temperature gauges. Turns controls to set press temperature, pressure and curing time. Turns conveyor control to position workpieces between platens and starts machine to bring platens into contact with workpieces. 2. Assembles curved or contoured parts on conveyor table of autoclave and places thermocouples at critical points on table. Places plastic sheet over assemblies and seals edges of sheet to table with bead of sealant, to form vacuum cover. Pushes conveyor table into autoclave and connects vacuum lines and thermocouple leads. Closes autoclave door and turns controls to set temperature, air pressure and curing cycle. Turns control to apply vacuum beneath table cover, and starts autoclave. Observes indicators during curing cycle and adjusts controls as necessary.

8515-138 AIRFRAME SUBASSEMBLER(air & space-craft) DPT:684
assembler, aircraft structures and surfaces.
GED: 4 SVP: 5 EC: 1 5 PA: M 2 3 4 7

Fits and assembles metal skin and structural members to form airframe subassemblies and sections:

Aligns parts or subassemblies on bench, jig or airframe, using

templates and fixtures, or following drawings and station lines. Files, saws and deburrs parts, and drills, reams and countersinks holes, using hand and power tools. Inserts temporary fasteners into rivet holes to hold sections in position for riveting. Rivets and bolts parts, sections or subassemblies together, using portable dimpling and rivetting guns, and hand tools, or dimpling and rivetting machines. Assembles and installs fixtures and fittings such as braces, mountings, heating and ventilating ductwork, clips, brackets and air and liquid tanks, using wrenches and riveting gun. Cuts safety glass to required shape for windows and windshields. Fits and cements weather-stripping, and secures frames and flanges to windshields, doors and windows. Installs completed units in aircraft, using drills, riveting gun and hand tools.

8515-142 AIRCRAFT SEALER(air & space-craft) DPT:684
pressure sealer-and-tester.
GED: 3 SVP: 4 EC: 1 7 PA: L 2 3 4 7

Seals and tests aircraft tanks and pressurized compartments:

Cleans surfaces, using solvents, brushes and cloths. Applies sealants to internal seams and surfaces, using pressure guns, sprays and brushes. Dries sealants, using heat lamps and hot-air blowers. Closes openings of tanks or compartments to be leak-tested, and connects hoses of pneumatic test equipment, using fittings and wrenches. Turns valves to admit compressed air to tank or compartment, and observes gauges to determine leakage. Brushes soapy solution on suspected leak areas, and marks location of leaks detected. Repairs or reworks defective sealing and retests.

May work inside pressurized tank or compartment to detect and reseal leaks, in co-ordination with other workers on the outside, maintaining communication by telephone. May trim, fit and install composition linings in structural cavities to provide bases for fuel-tank installations, using templates, bandsaw and adhesives.

8523-INDUSTRIAL, FARM, CONSTRUCTION AND OTHER MECHANIZED EQUIPMENT AND MACHINERY FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with fabricating and assembling machinery and equipment; such as, printing machinery; textile manufacturing equipment; turbines and steam generators; material handling equipment; farm equipment and machinery; such as, combines, ploughs, disks, milking machines and separators; construction machinery and equipment, such as graders, bulldozers and cranes; railway rolling stock; and motorized machinery and equipment, such as snow vehicles, hovercraft and power lawn mowers. Activities include: aligning, fitting, fastening, bolting, riveting and welding to install parts, engines and other components and assemblies; and finishing and adjusting fabricated or assembled equipment, using common or special hand and power tools and equipment. Industrial, farm, construction and other mechanized equipment repairing occupations are classified in Unit Group 8584, INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN.

8523-110 PROTOTYPE BUILDER(mech. equip., n.e.c.; motor vehicle) DPT:261
GED: 4 SVP: 8 EC: 1 5 6 PA: M 3 4 5 6 7

Assembles and tests experimental models of mechanized equipment, such as farm machinery, recreational vehicles, and construction machinery, according to engineering specifications:

Examines drawings and materials list to obtain parts specifications, and plans sequence of operations. Requisitions standard and special parts from production departments. Examines special parts for flaws and verifies conformance to specifications, using measuring devices. Lays out, positions, aligns and assembles frame of prototype model, using hand tools and welding equipment. Installs other components onto frame; such as, engine, clutch, brakes and driving track, using electric hoist, hand and power tools. Fits and adjusts fibreglass or sheet metal parts to frame. Installs seats and other padding material at

specified locations. Tests engine of prototype model by operating at varying speeds and making necessary adjustments to conform to specifications. Drives vehicle on test track to determine defects in performance. Writes report to engineering staff stating functional characteristics of vehicle, and suggests changes to improve performance and quality.

8523-114 LOCOMOTIVE BUILDER(rail. rolling stock) DPT:281

GED: 4 SVP: 7 EC: 1 5 6 PA: H 2 3 4 7

Builds diesel locomotives, by performing any combination of the following duties:

Reads blueprints and specifications to plan assembly procedure. Lays out and marks lines, reference points and patterns on structural parts, using tape, transit, square, templates, center punch and scribe. Moves heavy parts or units into position, using hoist or crane. Drills and reams holes in parts, using radial drill or drill press. Shrink-fits parts such as wheels to axles and gears to shafts, using furnace, acetylene torch and hydraulic press. Aligns parts, using transit, spirit level, jacks, shims, pry bar and sledge. Fits, bolts, screws, rivets or tack-welds parts together; such as, plates, frames, bulkheads and trucks to build locomotive body. Installs windows, insulation, seats and other trim articles. Installs diesel engine, electric generator, pumps, brakes and controls.

May install oil, air, fuel and water lines in locomotive. May rebuild damaged locomotives.

8523-118 MACHINE BUILDER(mech. equip., n.e.c.) DPT:281 fitter-assembler; machine assembler; machine fitter.

GED: 4 SVP: 7 EC: 1 6 PA: M 3 4 7

Fits and assembles parts and subassemblies to build machinery and equipment; such as, metal-forming machines, food-wrapping machines, material-handling equipment, earth-moving equipment and compressors, by performing any combination of the following duties:

Examines blueprints and specifications, and plans building sequence. Moves bedplate, frame or heavy parts into position, using hoist. Levels plates or frames, using transit, level, shims and jacks. Lays out mounting holes and reference lines, using transit, square, rule, tape, center punch and scribe. Drills, taps and reams holes, using drill press or portable drill. Files, grinds, laps or scrapes parts to remove high spots and to ensure proper fit. Bolts, screws, rivets, dowels, tack-welds, shrink-fits or press-fits parts together to assemble machine or equipment, using hand tools, power tools, welding equipment, acetylene torch and arbor press. Cuts, threads and installs hydraulic, pneumatic, oil or water lines. Verifies alignment and clearances of parts, using gauges, micrometer, calipers and other measuring instruments. Greases and oils machine or equipment. Operates unit to test performance and makes adjustments as required.

May set up and operate metal-working machines to shape parts. May install electrical or electronic equipment, wiring or controls. May dismantle unit and erect at customer site. May rebuild or repair unit. May build a particular type of machine or equipment and be designated accordingly; for example,

Compressor Assembler
Crane Assembler
Grader Assembler
Vibrating-Equipment Mechanic

8523-122 PIPE FITTER, TURBINES(mech. equip., n.e.c.) DPT:381

GED: 4 SVP: 7 EC: 1 PA: H 2 3 4 7

Fabricates, assembles, and installs high and low pressure piping, for steam, air, hydraulic, cooling, lubrication or fuel-flow systems, on steam or gas turbines, compressors, pumps and generators:

Reads drawings and schematic diagrams, and plans work procedures. Selects specified type and size of piping from stock. Cuts pipe to required length, using hacksaw or pipe-cutter. Heats heavy pipe to facilitate bending, using acetylene torch. Bends pipe as specified, using pipe-bender or hydraulic pipe-bending machine. Threads piping as required, using vise, stock and dies. Brazes fittings in position. Installs valves, gaskets and pipes, using wrenches, or welds or brazes pipes together to form assembly, working from erection pit or platforms. Cleans piping system, using compressed air line. Corrects defects revealed by functional tests. Disassembles piping, and tags or colour-codes items to identify for reassembly at installation site.

May lay out pattern of complicated bends, using drafting equipment.

May fabricate piping for spare stock. May remove and replace unserviceable piping.

8523-126 ATOMIC-FUEL-BUNDLE ASSEMBLER(metal fab., n.e.c.) DPT:381

fuel-rod assembler.

GED: 3 SVP: 6 EC: 1 6 PA: M 4 7

Assembles atomic fuel bundles for use in nuclear reactors, by performing any combination of the following duties:

Measures inside diameter and wall thickness of special-alloy tubes, using gauge. Loads tubes onto racks and immerses tubes into degreasing and rinsing tanks, using hoist. Loads uranium dioxide pellets into tubes manually, using safety equipment. Fits and welds end plugs and spacers to loaded tubes, using welding machine. Assembles tubes together in jig to form bundle, and welds plates to ends of bundles to secure tubes. Dips bundles in solution tank to coat them with sealing compound, using hoist. Tests bundles to detect contamination leaks, using leak bubble tests, geiger counter and related equipment. Weighs bundles, records data and packs bundles into polystyrene containers for shipping.

8523-130 PIPE FITTER, RAILWAY CAR AND LOCOMOTIVE (rail. rolling stock) DPT:381

GED: 3 SVP: 6 EC: 1 PA: H 2 3 4 7

Fabricates, installs and tests air, fuel, water and other piping systems in railway cars and locomotives:

Selects type and size of pipe and related materials according to drawings and specifications. Measures, cuts, threads and bends pipe, using rule, scribe, pipe cutter, pipe-threading machine and pipe-bending machine. Positions pipes and components; such as, valves, couplings, pressure cylinders, pneumatic and hydraulic controls, in locomotive or railway cars. Connects parts of system following drawings, using brackets, clamps, hand tools, power tools and welding equipment. Connects piping system with shop test lines, and turns valves to start air, oil or water through system. Observes gauges and joint connections to detect pressure variances and leaks. Adjusts system to specifications.

May replace worn, corroded or broken piping on railway rolling stock.

8523-134 GEARCASE ASSEMBLER(mech. equip., n.e.c.) DPT:381

gear-train fitter.

GED: 3 SVP: 4 EC: 1 PA: M 4 7

Assembles gearcases and power drives for farm and garden machinery:

Fits bearings and bushings, using arbor press or hand tools. Assembles and positions gears, shafts and pins as specified, with keys, set screws and bolts, using hand tools and fixed gauges. Inspects assembly for run-out, using dial indicator. Corrects run-out, and adjusts backlash and pressure points in mating gears, using shims. Installs housing cover plates and grease cups. Lubricates gearcase and mounts case in power-driven inspection fixture to test and adjust assembly.

May install and adjust springs, pulleys and belt drives, sprockets and chain drives, in farm machinery.

8523-138 FARM-MACHINERY ASSEMBLER(mech. equip., n.e.c.) DPT:684

GED: 2 SVP: 3 EC: 1 5 PA: M 3 4 7

Assembles farm tractors, combines, disks and ploughs at station on assembly line:

Positions and aligns engines, transmissions and wheels, with main frame, using hoist. Installs radiators, gear and chain drives, fuel lines and tanks, using power drills, wrenches, hammer and screwdriver. Files surface edges and reams holes to achieve prescribed fit. Sets required clearances between parts, using fixed gauges. Tightens nuts and bolts, using torque wrench.

May install customer-specified components and accessories as detailed on work order or simple shop drawing. May be designated according to type of unit assembled; for example,

Plough Assembler
Tractor Assembler

8523-142 FARM-MACHINERY DISMANTLER(mech. equip.,
n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I 5 PA: M 2 3 4 7

Dismantles farm machinery, such as combines, tractors and harvesters, to reduce bulk for export crating:
Dismantles protruding parts, such as wheels, mufflers, fenders, seats and combine reels, as specified in shop order, using hand tools, hoist and jacks. Coats unpainted machinery parts, using oil spray gun. Packs nuts, bolts, washers and small components in bag. Records name and number of components on tag, and ties tag and bag to machine frame. Drains fuel from fuel tank. Records name and number of parts dismantled, on packing slip.

8523-146 GARDEN-MACHINERY ASSEMBLER(mech. equip.,
n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Assembles power lawn mowers, snow blowers and rotary tillers, by performing any combination of the following duties:
Drills mating holes, rivets parts and inserts bushings, to prepare parts for subassembly. Fits and secures parts, using hand and power tools, to form subassemblies; such as, reel units, drive assemblies and rotary cutting units on power lawn mowers, impellers and chutes or snow blowers and tire assemblies on rotary tillers. Installs gear on belt drives, controls or engines to form completed units.
May be designated according to type of unit assembled; for example, Power-Lawn-Mower Assembler
Rotary-Tiller Assembler
Snow-Blower Assembler

8523-150 RAILWAY-CAR TRIMMER(rail. rolling stock)
trimmer, coach. DPT:684
GED: 2 SVP: 3 EC: I PA: M 3 4

Installs articles; such as, seats, windows, grab handles, emergency cords and curtains in railway cars or subway cars:
Sprays window guides with lubricating compound to ensure correct operation of windows. Positions and fastens windows in casings. Positions, bolts, screws or otherwise fastens seats, handles, hand rails, curtains and emergency cords into place, using hand tools and power tools.

8523-154 RAILWAY-CAR-TRUCK ASSEMBLER(rail. rolling
stock) DPT:684
GED: 2 SVP: 3 EC: I 5 6 PA: H 3 4 7

Assembles frames, beams, brakes and springs to form railway car truck and wheel units:
Positions bolster on erection block and lowers side frames and brake beams into bolster slots, grooves, and recesses, using hoist. Assembles brake parts; such as, bottom rods, traverse plates, fulcrum and levers, and secures unit to brake beams and shoes, with bolts and cotter pins, using hand tools and portable power tools. Sets springs on studs in spring housing and places adapters in grooves on axle wheel bearings. Lifts complete truck unit over truck wheel assemblies, using hoist, and lowers unit into position. Pushes truck and wheel assembly along track for next operation.

8523-158 SEWING-MACHINE ASSEMBLER(mech. equip.,
n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4 7

Assembles domestic and industrial sewing machines or subassemblies, by performing any combination of the following duties:
Screws and bolts parts together to assemble units or subassemblies; such as, machine head, knee control or light fixture. Mounts or fastens parts or units; such as, head, motor, drive belt and treadle control to table or stand. Verifies alignment and clearance of parts, using fixed gauges. Lubricates parts, using oil can.

8523-162 SNOWMOBILE ASSEMBLER(motor vehicle)
DPT:684
GED: 2 SVP: 3 EC: I 5 PA: M 4

Assembles snowmobiles by performing any combination of the following duties:
Fits, bolts or screws parts together to form subassemblies, such as frame, dolly-wheel unit and ski assembly, using gauges, arbour press, hand tools and power tools. Tests operation of subassemblies and makes necessary adjustments. Positions and bolts parts and subassemblies; such as, motor, rubber track, handlebars, seat and body shell to frame. Installs and connects electrical wiring to lights, battery and ignition system.
May drill, tap and ream holes in parts, using drill press. May assemble snowmobile engines.

8523-166 RAILWAY-CAR LINER(rail. rolling stock) DPT:684
GED: 2 SVP: 2 EC: I PA: M 2 3 4

Installs wall, ceiling and floor linings in railway freight cars:
Fits precut panels of aluminum, stainless steel or wood to car frame. Drills holes and screws panels into place, using power tools.
May insert and cement slabs of foam insulation between outer walls and inside panels.

**8523-199 OTHER INDUSTRIAL, FARM, CONSTRUCTION
AND MECHANIZED EQUIPMENT AND
MACHINERY FABRICATING AND
ASSEMBLING OCCUPATIONS**

This group includes workers, not elsewhere classified; for example, those who fabricate and assemble industrial, farm, construction, and mechanized equipment, such as hovercraft, and reed assemblies for textile looms. A typical example of an occupational title covered by this residual group definition is:
Reed Maker(mech. equip., n.e.c.)

**8525-BUSINESS AND COMMERCIAL MACHINES
FABRICATING AND ASSEMBLING OCCUPATIONS,
N.E.C.**

This unit group includes occupations, not elsewhere classified, concerned with fabricating and assembling typewriters, calculating, bookkeeping, adding, duplicating, and other business machines from manufactured parts and assemblies. Activities include: fitting, bolting, screwing and fastening to install parts and assemblies, and adjusting parts and assemblies, using a variety of common or special hand and power tools and equipment. Business and commercial machines repairing occupations are classified in Unit Group 8585, BUSINESS AND COMMERCIAL MACHINE MECHANICS AND REPAIRMEN. Electronic data-processing equipment assembling occupations are classified in Unit Group 8534, ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS.

8525-110 ADJUSTER, KEYBOARD MACHINES (mech.
equip., n.e.c.) DPT:381
GED: 3 SVP: 6 EC: I PA: M 4 7

Adjusts interrelated parts of typewriters, and adding, accounting and similar keyboard business machines, to synchronize their operation:
Reads inspection report to determine defects, or operates machine to test functioning and synchronization of parts. Bends or taps parts, or turns screws, to eliminate binding, looseness and misalignment, and to synchronize trips and releases, using special- purpose hand tools. Replaces defective parts. Verifies spacing and tension of parts, using instruments such as feeler gauges, dial indicators and tension scales. Replaces electrical or electronic components as required.
May repair machines removed from assembly line. May be designated according to type of machine adjusted; for example,
Adjuster, Adding Machine
Adjuster, Calculating Machine
Adjuster, Cash Register
Adjuster, Typewriter

8525-114 PERIPHERAL-EQUIPMENT ASSEMBLER (mech. equip., n.e.c.) DPT:381
GED: 3 SVP: 6 EC: I PA: M 4 7

Assembles and adjusts punched card, magnetic tape, magnetic ink character recognition (MICR) and similar machines: Reads drawings or diagrams to determine position of components in machine, and assembly procedure. Mounts components, such as vacuum pumps, switches and keyboard assemblies, on machine frame or in machine cabinet, using hand and power tools. Starts machine and observes operation. Adjusts timing, clearances, linkages and parts to ensure proper operation of machine, using fixed gauges, test lights, meters and hand tools.

May assemble components prior to mounting in machines, using hand and power tools. May install wiring and cables in machines, using hand tools. May be designated according to type of machine assembled; for example, Punched-Card-Machine Assembler

8525-118 TYPEWRITER ALIGNER(mech. equip., n.e.c.) DPT:381
GED: 3 SVP: 6 EC: I PA: M 4 7

Adjusts type and type-bars of assembled typewriters, to obtain even spacing, equalized impression and alignment of characters:

Verifies serial number, carriage model, keyboard and type style against specifications. Inserts sheet of paper into typewriter. Manually types alternate upper and lower case characters of each key, or plugs typewriter into automatic robot typing machine that runs typewriter through programmed typing sequence, to produce sample of type. Examines typing for defects. Bends or straightens type or type-bar, to space and align characters or equalize impressions, using special-purpose hand tools and first aligned character as guide. Turns regulator or impression screw on electric typewriters to adjust type-bar stroke and equalize impression. Aligns type-bar- and-segment assembly in relation to platen, using hand tools. Removes or replaces defective type, using soldering torch.

8525-122 DUPLICATING-MACHINE ASSEMBLER (mech. equip., n.e.c.) DPT:381
GED: 3 SVP: 5 EC: I PA: M 4 7

Assembles parts and subassemblies to make spirit duplicators and thermal copiers:

Examines drawings and wiring diagrams to determine assembly procedure. Drills, reams and taps holes in parts, using drill press or portable drill. Fits, screws, bolts or rivets together parts and subassemblies; such as, frame, drum, feed rollers and controls, using hand and power tools. Installs and connects motor and wiring in electrically-operated machines. Starts machine and observes operation. Adjusts clearances and synchronization of parts to ensure proper operation, using hand tools and space and feeler gauges.

May rebuild offset machines. May test and prepare imported office machines, such as folding and mailing machines, for customer use.

8525-126 KEYBOARD-MACHINE ASSEMBLER(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I PA: M 4 7

Assembles parts to make typewriters, and adding, accounting and similar keyboard business machines:

Fits, screws and bolts together parts; such as, frame, platen, covers, key-levers and key-tops, using hand and power tools, to make machine or subassembly. Tests machine to detect loose or binding parts, and to verify operation of interrelated parts. Twists, bends and taps parts into alignment, using pliers, mallets, screwdrivers and special hand tools. Verifies tension and clearance of parts, using tension scales, and space and feeler gauges. Lubricates moving parts, using oil and brush. May ream, tap and file parts, using variety of tools. May be designated according to type of machine assembled; for example, Assembler, Adding Machine Assembler, Cash Register Assembler, Electric Typewriter Assembler, Standard Typewriter

8525-130 VENDING-MACHINE ASSEMBLER(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I PA: M 4 7

Assembles vending machines that dispense items such as food, drinks and sundries, by performing any combination of the following duties: Assembles parts to make subassemblies, such as latch mechanisms, bottle racks and cooling fans, using hand tools. Cuts, bends, installs and connects copper or plastic tubing in machine, using pipe cutter, hand shears, brazing equipment and hand tools. Mounts units; such as, refrigeration compressor, hot-water tank, heating element and coin mechanisms in machine frame or cabinet, according to specifications. Charges refrigeration systems with gas. Installs and connects wiring harnesses. Fits doors and covers, using hand tools. May rebuild used machines.

8525-134 PERIPHERAL-EQUIPMENT SUBASSEMBLER (mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Assembles variety of subassemblies; such as, brush slides, switches, clutches and gear mechanisms, for punched card, magnetic tape, magnetic ink character recognition (MICR) and similar machines:

Reads drawings or diagrams to determine relationship of parts, and assembly procedure. Positions parts; such as, cams, shafts, frames, keys and brushes in assembly fixtures. Fastens parts together with bolts, screws or rivets, using power tools, hand tools, hand press or riveting equipment. Adjusts linkage and clearance of assembled parts, using fixed gauges and hand tools.

8525-138 TYPE-BAR-AND-SEGMENT ASSEMBLER (mech. equip., n.e.c.) DPT:684
type-bar assembler.
GED: 2 SVP: 3 EC: I PA: L 4

Assembles typewriter type-bar-and-segment units, and bends ends of type-bars to specified angles preparatory to type soldering:

Clamps segment in holding fixture and inserts type-bars into segment slots. Pushes curved wire (fulcrum) through channel in segment and through holes in type-bars to hold them in place. Places assembled type-bar-and-segment unit on holding plate of braking device. Positions type-bar in centering slot of device, and moves levers to grasp and bend end of type-bar to specified angle. Repeats operation for each type-bar.

May deburr segment slots or type-bars to permit free movement of bars, using hand file or emery wheel. May screw parts, such as ribbon guide and V-blocks, to segment, using hand tools.

8525-142 TYPEWRITER-PARTS SALVAGE MAN(mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4 7

Disassembles, sorts and repairs defective typewriter parts and subassemblies to reclaim serviceable parts:

Transports containers of rejected parts from assembly lines to work area, using hand truck. Reads rejection tags or written instructions to determine disposition of parts. Dismantles subassemblies, using hand tools. Examines parts and sorts them into lots for reuse, repair, or salvage. Repairs or salvages parts by bending, grinding or drilling, using variety of hand and power tools.

8525-199 OTHER BUSINESS AND COMMERCIAL MACHINES FABRICATING AND ASSEMBLING OCCUPATIONS

This group includes business and commercial machine fabricators and assemblers, not elsewhere classified; for example, those who assemble postage meters, collators, binding equipment, dictating equipment, paper punches and tape dispensers. Typical examples of occupational titles covered by this residual group definition are: Dictating-Machine Assembler(mech. equip., n.e.c.) Tape-Dispenser Assembler(mech. equip., n.e.c.)

8526-INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C.

This unit group includes occupations, not elsewhere classified, in inspecting and testing work, as described under the term titles, 02-170 INSPECTOR (any ind.) and 02-430 TESTER (any ind.). Activities are primarily associated with quality control in the fabrication and assembly of a wide variety of metal products; such as, motor vehicles, snowmobiles, small arms and metal shell cases, engines and their accessories, agricultural equipment, scientific testing and control equipment, business machines, timepieces, bicycles, photographic equipment, vending machines, metal furniture, sewing machines and ornamental metalwork. Occupations concerned with inspecting and testing assembled explosives and ammunition are classified in Unit Group 8596, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.

Motor Vehicle Inspectors and Testers 8526-110 through 8526-134

8526-110 FINAL INSPECTOR, TRUCK TRAILER(motor vehicle) DPT:381
GED: 4 SVP: 6 EC: 1 PA: L 2 3 4 7

Examines assembled truck trailers, such as fuel tankers, cement trailers and moving vans, for conformance with manufacturing specifications and company standards:

Reads work order and studies drawings and specifications to determine standards against which vehicle is to be inspected. Measures parts and compares dimensions with specifications, using steel tape, fixed gauges and micrometers. Inspects electrical wiring and accessories for proper installation by operating switches. Examines interior and exterior of vehicle for installation and function of parts and assemblies; such as, doors, bumpers, mudflaps, axles, wheels, undercarriage, brake system and ceiling and wall construction. Examines installation and functioning of king-pin plate that couples trailer to tractor. Examines welded and painted surfaces for flaws. Operates auxiliary equipment; such as, hydraulic pumps, valves and hoses for tankers, refrigeration units and fire extinguisher systems. Verifies that trailer is equipped with all items on check list. Prepares report and arranges for defects to be repaired.

May test tank by filling it with water and observing it for leaks, or by placing it in dark room, lighting up tank interior and observing it for light emission from cracks. May road test vehicles.

8526-114 TEST DRIVER(motor vehicle) DPT:383
roll tester.
GED: 3 SVP: 6 EC: 1 5 PA: L 4 6 7

Operates completed vehicle under its own power on stationary testing device to discover performance defects:

Drives vehicles, such as car, truck or snowmobile, onto rollers of testing unit. Starts engine and operates vehicle at various speeds. Observes test gauges, such as tachometer and temperature gauge to detect malfunctions. Listens for unusual noises indicating defects in engine or transmission. Moves switches and controls to test operation of accessories; such as, power windows, lights, horn and brakes. Marks off, on check list, each item inspected, indicating location and nature of malfunctions.

8526-118 AUTOMOBILE INSPECTOR AND TESTER(motor vehicle; ret. trade) DPT:383
GED: 3 SVP: 5 EC: 1 PA: L 4 6 7

Inspects, tests and finishes new cars in factory or dealer's workshop: Examines car for scratches, dents, poor paintwork and missing trim or screws. Operates lights, horn and power accessories to detect malfunctions. Drives car to test steering, brakes, transmission and engine and listens for irregular sounds. Touches up paintwork and replaces missing or defective components, using spraying equipment and hand tools. Records defects and corrective action on work sheet.

May install accessories; such as, lights, mirrors and defrosters, using hand and power tools. May spray car underbody with rust- proofing

compound. May inspect and test cars at factory, car dealership or rental agency and be designated accordingly; for example,
Car Examiner
New-Car Preparer
Road-Test Mechanic

8526-122 ENGINE TESTER(motor vehicle) DPT:384
GED: 3 SVP: 5 EC: 1 5 6 PA: L 4 7

Tests new automobile engines prior to mounting in chassis: Mounts engine on test stand, using hoist. Connects fuel, exhaust, coolant and electrical lines, using hand tools. Starts engine and examines block and accessories for oil and water leaks. Adjusts ignition timing to specifications, using timing light. Describes defective parts or operation on check sheet. Routes faulty engines to reworking area.

May adjust carburetor or tappet settings to improve engine performance.

8526-126 SNOWMOBILE INSPECTOR(motor vehicle) DPT:384
GED: 3 SVP: 5 EC: 1 5 7 PA: M 4 6 7

Inspects new snowmobiles for conformance to specifications: Starts engine and operates snowmobile on roller testing device. Observes readings of instruments and listens for abnormal sounds from engine and transmission to detect malfunctions. Turns screws and nuts to adjust brake, carburetor, clutch or engine timing to attain specified performance or action, using hand tools. Records serial numbers and inspection results on check-sheet.

May inspect small amphibious or all-terrain vehicles or test drive experimental or prototype vehicles on test track and be designated accordingly; for example,
Inspector, All-Terrain Vehicles
Snowmobile-Test Rider

8526-130 FINAL INSPECTOR, AUTOMOBILE(motor vehicle) DPT:587
automobile checker.
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Inspects completed automobile for installation and operation of options and equipment according to specifications: Examines car for installation and function of specified accessories; such as, radio, heater, air-conditioning unit and defroster. Tests operation of windows, doors, lights and controls on dash panel. Examines seats, headlining, and door paneling for spots or tears in upholstery. Inspects car exterior for chips, scratches and marks on painted surfaces. Records defects on check list.

May prepare vehicle for export by removing wheel disks, antenna and windshield wipers and locking them inside car. May examine chassis for loose or defective parts and for missing bolts and screws. May inspect completed snowmobiles and be designated accordingly,
Final Inspector, Snowmobile

8526-134 WATER-LEAK EXAMINER(motor vehicle) DPT:687
GED: 2 SVP: 2 EC: 1 4 PA: S 7

Examines automobile bodies for water leaks: Sits in automobile as it is conveyed under coloured waterspray containing fluorescent material, in darkened room. Inspects interior for water leaks, using fluorescent lamp. Marks location of leaks on diagram. Seals leaks by adjustment of parts or with sealing compound, using hand tools.

Small-Arms Inspectors and Testers 8526-154 through 8526-174

8526-154 FIREARMS INSPECTOR(sport. & toy) DPT:384
rifle inspector; shotgun inspector.
GED: 3 SVP: 6 EC: 1 PA: L 4 7

Inspects and tests finish and mechanical action of assembled firearms: Examines weapon visually to detect defects; such as, scratches, file-marks and misalignment of components. Tests tightness and fit of screws, nuts and pins, using hand tools. Loads firearm with dummy cartridges. Cocks weapon, presses trigger and ejects cartridge to detect

malfunctions. Initials log sheet or tag, recording information, such as serial number of weapon and nature of defects found.

8526-158 SMALL-ARMS TESTER(sport. & toy) DPT:384
gun tester.
 GED: 2 SVP: 5 EC: I 5 6 PA: L 4 7

Test fires weapons; such as, cartridge rifles and air or gas powered pistols and rifles:
 Positions target at specified distance. Loads weapon with suitable ammunition or cylinder of compressed carbon dioxide gas. Aims and fires a series of shots at target, using gun rest. Examines shot pattern on target to determine sighting error. Adjust sights to obtain specified accuracy, using hand tools. Repeats test firing and adjustments until shot pattern is brought within required limits. Determines firing deficiencies of rejected firearms. Records observations on tags, and routes weapons for reworking.
 May test fire rifles to prove integrity of components, using specially overcharged proof cartridges, holding devices and remote control firing equipment. May examine marking on cartridges to detect deficiencies in firing pins or extractor mechanisms. May verify muzzle velocity of weapon, using photo-electric chronographic equipment.

8526-162 AMMUNITION-SALVAGE INSPECTOR(explosives) DPT:684
 GED: 2 SVP: 3 EC: I 6 PA: S 4 7

Inspects ammunition from assembly line, to reclaim salvageable parts; such as, fuses, cases, powder and shot:
 Inspects and measures cartridges, shotgun shells, fuses and blasting caps to determine salvageability, using gauges and measuring instruments. Examines items for cracks and corrosion and separates them according to defects and salvage value. Feeds cartridges into machine to remove bullets and routes cases and primers to destruction furnace. May dismantle cartridges and shotgun shells, using hand press. May dump powder and shot onto screen to remove impurities prior to reclamation.

8526-166 BULLET AND CARTRIDGE-INSPECTOR DPT:687
 (explosives)
 GED: 2 SVP: 3 EC: I 5 PA: S 4 7

Examines slugs, bullet jackets and cartridge cases for defects to ensure conformance to specifications:
 Aligns slugs on grooved inspection plate by scooping them onto plate and shaking plate manually to remove excess slugs. Examines slugs, bullet jackets and cartridge cases for defects; such as, burrs, dents, holes, distortion and improper size, on inspection plate or as they pass by on conveyor. Picks out defective slugs, bullet jackets or cartridge cases by hand and drops them into scrapbox.
 May inspect different types of wads and separate them according to defects. May record data on time card, such as quantities of slugs or cases accepted and rejected.

8526-170 CARTRIDGE EXAMINER(explosives) DPT:686
 GED: 2 SVP: 2 EC: I 5 6 PA: S 4 7

Feeds cartridges into machine that gauges and weighs them, and rejects those not meeting specifications:
 Scoops quantity of cartridges from bin and arranges them with heads in one direction. Rolls cartridges from hand to hand and examines them visually for defects; such as, dents, scratches, burrs, holes, rust spots and missing or inverted primers. Places acceptable cartridges on inclined chute for gravity feeding into gauging and weighing machine. Presses button to start machine and observes operation to detect jamming. Removes misaligned cartridges from gravity chute, using wire hook. Moves lever to eject jammed cartridges from machine. Notifies machine adjuster of machine malfunctions.

8526-174 SHOTGUN-PROOF TESTER(sport. & toy) DPT:587
 GED: 2 SVP: 2 EC: I 5 6 PA: L 4 7

Fires shotguns to prove integrity of components and to test loading, firing and ejection mechanisms:
 Mounts gun in fixture and loads gun with proof (specially overcharged) shells. Attaches lanyard to trigger and stands behind barrier. Pulls lanyard to fire gun to test safety of gun construction and

resistance against bursting. Loads and free fires gun several times, using regular shells, to verify action of various mechanisms. Examines gun and spent shells for indications of mechanical defects; such as, cracks or gouge marks. Records test results on tags attached to guns. May stamp proofmark on barrel, using hammer and die-stamps. May clean bore of guns, using cloth-tipped rod.

Engines and Accessories Inspectors and Testers
8526-194 through 8526-218

8526-194 DYNAMOMETER TESTER, ENGINES(mech. DPT:281
 equip., n.e.c.; motor vehicle)
diesel-engine tester.
 GED: 4 SVP: 7 EC: I 5 PA: M 4 7

Tests operation of new or reconditioned diesel or gasoline engines and accessories, using dynamometer:
 Lifts engine onto test-bed, using hoist, and couples engine drive-shaft to dynamometer. Attaches fuel, coolant and electrical connections, using hand tools. Starts engine under test to drive dynamometer. Reads gauges to determine that conditions; such as, engine revolutions, developed horsepower and manifold vacuum at specified speeds meet operating standards. Records temperatures and pressures of oil, water, bearings and fuel pump. Fits gauge to various spark plug or injector orifices to verify compression pressures. Replaces or adjusts accessories; such as, spark plugs, fuel pumps and injectors. Adjusts settings of governors, ignition timing, carburetors and tappets, using timing light, gauges, micrometer and hand tools. Compiles data sheet detailing findings, and makes recommendations for corrective action as required.
 May turn switches causing dynamometer to drive engine and determine power required to turn engine. May listen for noises, such as rattles and piston slap, to detect irregularities. May make various engine adjustments to obtain maximum economy or power output, and be designated accordingly,
 Tune-Up Man

8526-198 PROTOTYPE TESTER, OUTBOARD DPT:281
 MOTORS(mech. equip., n.e.c.)
experimental mechanic.
 GED: 4 SVP: 7 EC: B 5 PA: H 4 6 7

Tests and adjusts experimental outboard motors to attain specified operational efficiency:
 Mounts motor on boat or on edge of testing tank. Operates motor at various speeds in waterway or tank. Observes gauges and records engine revolutions and temperature, power output and generator voltage. Measures and records boat speed, thrust forces and engine balance, using manometer, tachometer and vibration analyzer. Analyzes test data to determine modifications required. Dismantles motor, using hand and special tools, to remove component parts for modifications. Reworks and modifies motor and drive parts, such as pistons, valves and propeller, using hand and machine tools. Assembles motor and conducts further tests to obtain desired performance.
 May test and adjust prototypes of light stationary internal-combustion engines and be designated accordingly,
 Test Mechanic, Small Engines

8526-202 ENGINE-QUALITY-CONTROL INSPECTOR(mech. DPT:281
 equip., n.e.c.; motor vehicle)
quality-audit inspector.
 GED: 4 SVP: 6 EC: I PA: L 4 7

Inspects internal combustion engines and components for conformance to specifications and quality standards:
 Reviews performance test report on sample engines. Compares test data describing factors; such as, horsepower, fuel consumption, manifold vacuum and cylinder compression, with specifications. Analyzes data to determine reason for failure to attain required performance. Measures dimensions of dismantled parts; such as, pistons and rings, valves, bearings and shafts, using gauges, micrometers and special tools. Compares measurements with specifications to detect substandard components. Advises supervisor of inspection results.
 May dismantle and reassemble engines. May inspect incoming or

purchased parts. May specialize in quality-audit inspection of automotive or marine-craft engines and be designated accordingly; for example,

Quality-Control Inspector, Automotive Engines(motor vehicle)
Quality-Control Inspector, Marine Engines(mech. equip., n.e.c.)

8526-206 OUTBOARD-MOTOR INSPECTOR AND TESTER(mech. equip., n.e.c.) DPT:384
GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Inspects, tests and adjusts outboard motors from production line: Examines completed motors for dents, scratches, poor paintwork and missing parts. Fits special test propeller to motor, using wrench. Mounts motor frame in water-filled tank and attaches test leads. Starts motor and observes operation for malfunctions, such as, misfiring and excessive smoking or vibration. Reads gauges on test apparatus to verify conditions, such as engine revolutions, coolant temperature and fuel consumption. Adjusts carburetor and ignition timing, using special tools. Aligns gearshift lever, using hand tools and ensures correct gear selection. Records test results.

8526-210 ENGINE-ACCESSORIES INSPECTOR(air & space-craft; mech. equip., n.e.c.; motor vehicle) DPT:684
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Inspects internal-combustion engine accessories for conformance to specifications:

Examines accessories; such as, magnetos, alternators, starter motors, carburetors, pumps and valves for faulty assembly, surface defects and missing parts. Measures dimensions of components; such as, shaft diameters, jet sizes and air gaps, using micrometers and gauges. Connects air or liquid lines to pumps and valves to ensure correct operation and locate leaks. Mounts electrical units in testing device. Turns switch to operate unit and verify output and performance under simulated operating conditions. Stamps or tags inspected parts.

8526-214 TRANSMISSION TESTER(mech. equip., n.e.c.; motor vehicle) DPT:584
GED: 3 SVP: 4 EC: 1 PA: L 4 6 7

Tests, automatic or manual, motor-vehicle transmissions under simulated operating conditions:

Mounts transmission onto test bed, using hoist. Flushes debris from gearcase, using flushing oil, and fills gearcase to level with specified lubricant. Attaches driving mechanism to transmission input shaft, using wrench. Starts motor to operate transmission at various speeds. Shifts gears to verify correct engagement of gear combinations. Detects malfunctions by listening to sounds emitted by transmission and by placing hand on gearcase to feel excessive vibration. Records test results.

May test non-automotive transmission, such as conveyor-line gearboxes.

8526-218 CLUTCH INSPECTOR(mech. equip., n.e.c.; motor vehicle) DPT:684
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Inspects friction clutch assemblies for defects:

Examines clutch plates to detect missing rivets, distortion and oil or dirt on friction material. Mounts clutch plate, pressure plate or complete clutch assembly in testing jig. Starts machine to rotate clutch. Measures eccentricity of rotation, using dial gauge. Pulls lever to withdraw pressure plate from driven plate to verify action of clutch. Rejects defective components.

May rotate clutches in machine to detect out-of-balance vibration. May verify flatness of contact faces, using straight-edge and gauges.

8526-236 MACHINE TRY-OUT MAN(metal fab., n.e.c.) DPT:280

GED: 4 SVP: 8 EC: 1 5 6 PA: M 4 7

Tests and verifies performance of various types of prototype and new production machine tools and metalworking machines; such as, lathes, milling machines, planers, forging presses and punch presses, by setting up and operating machines:

Installs dies or cutting tools in machine, following detailed drawings and using hand tools and measuring instruments. Sets controls to regulate speed of feed, depth of cut or length of ram stroke according to type of machine being tested. Operates machines in various setups to obtain sample workpieces. Verifies conformance of sample workpiece to specifications, using measuring instruments, such as calipers, micrometers and gauges. Adjusts machines so they conform to operating specifications. Notifies supervisor of malfunctions or problems with machine.

8526-238 TURBINE INSPECTOR AND TESTER(mech. equip., n.e.c.) DPT:381
GED: 4 SVP: 8 EC: 1 5 PA: L 2 3 4 7

Inspects and tests operation, alignment, control settings and clearance of moving parts of steam and gas turbines under static or simulated load conditions to detect defects of materials or workmanship:

Examines parts, materials and assemblies for defects and completeness. Reads blueprints and verifies dimensional accuracy, using micrometers, verniers, height gauges, calipers and gauge blocks. Examines turbine, generator and exciter bedplate to detect faulty alignment and centering, using dial indicators and optical instruments. Measures turbine blade clearance and alignment, using precision gauges. Operates turbine under no-load and simulated-load conditions and tests balance of rotating parts, using vibroscope. Records governor setting, oil pressures and overspeed trip-settings during test. May inspect parts or sub-assemblies during their assembly. May set up, gauge and calibrate test equipment.

8526-242 AIRCRAFT INSPECTOR, ASSEMBLIES AND INSTALLATIONS(air & space-craft) DPT:381
GED: 4 SVP: 7 EC: 1 PA: L 2 3 4 7

Inspects aircraft assemblies, such as wings, control surfaces, fuselage sections and landing gear, assembly of components and subassemblies into major structures, and complete aircraft, to ensure adherence to and compliance with standards and specifications designated on drawings and in manuals:

Verifies alignment of parts, and location and finishing of bolt, rivet and other attaching holes, using inspection equipment, such as templates, gauges, jigs and calipers. Checks dimensions, fit and clearances, and correct assembly and operation of components such as landing gear and actuators, using precision measuring instruments and test equipment. Examines engines and accessories, piping and electrical wiring to ensure proper installation. Examines aircraft structures to verify completeness and fastening of equipment, and to determine surface defects, such as scratches and cracks or other evidence of internal damage. Checks fitting and sealing of windows, doors and bulkheads, and fit, colour and quality of seats and upholstery and other internal trim for adherence to standards. Records observations and inspection results on inspection reports and affixes inspection stamp on components and assemblies accepted.

May inspect a particular type of aircraft or assembly and be designated accordingly; for example, Helicopter Inspector

8526-246 INSTRUMENT INSPECTOR AND TESTER(scient. & ind. equip., n.e.c.) DPT:381
GED: 4 SVP: 7 EC: 1 PA: L 4 7

Inspects and tests instruments, navigational aids and sensing devices; such as, gyroscopes, auto-pilots, guidance systems, altimeters, valves, gauges and temperature sensing probes, by performing any combination of the following duties:

Examines units for inclusion of specified parts and materials, proper assembly and general appearance, using magnifying glass. Measures components, housings and finished devices, using micrometers, calipers and gauges. Mounts instrument in electro-mechanical testing unit. Operates instrument under simulated conditions and reads dials, observes stroboscopic light and compares readings with specifications to verify accuracy and constancy of operation. Attaches test leads to

temperature probes and places probes in liquid or oven held at fixed temperatures. Applies electric current to probe, measures and computes electrical resistance of probe at specified temperatures, using galvanometer, oscilloscope and formulas. Connects lines to pressure sensors and places units in vacuum chamber. Starts vacuum pump to reduce pressure upon sensor. Applies varying electrical force to determine voltage required to break down sensor insulation at specific pressures, using power supply, oscilloscope and multimeter. Tests free movement of gyroscope parts by turning gears and gimbals. Writes inspection and procedure reports.

May clean and lubricate instruments and adjust contacts, using gauges and hand tools. May determine cause of malfunctions and route instruments to repair shop. May test master standard instruments and arrange for their certification. May specialize in inspection of aircraft instrumentation or work in standards laboratory and be designated accordingly; for example,

Aircraft-Instrument Inspector(air & space-craft)
Instrument Technician, Standards Laboratory

8526-250 MAJOR-ASSEMBLY INSPECTOR(mech. equip., n.e.c.) DPT:381
GED: 4 SVP: 6 EC: 1 PA: M 4 7

Inspects parts and component subassemblies of agricultural equipment, such as tractors and combines, for compliance with drawing specifications, using precision measuring instruments:

Inspects parts, such as housings, shafts, and gears, before assembly, for location and diameter of threaded holes, shaft diameter, and gear-tooth angle and spacing, using templates, and precision measuring instruments, such as micrometers, vernier calipers and dial indicators. Measures completed assemblies for fit and clearance of parts. Examines parts for casting flaws and surface defects, such as scratches and paint streaks. Records number of items rejected and reasons for rejection.

May compare faulty parts with drawings to determine type of defect. May order reworking of faulty parts.

8526-254 WATCH INSPECTOR(scient. & ind. equip., n.e.c.) DPT:381
watch-assembly inspector.
GED: 4 SVP: 6 EC: 1 PA: S 4 7

Examines watch assemblies, components and completed watch movements for mechanical and visual defects, using watch maker's tools and work aids, performing any combination of the following duties:

Inspects banking of pallet and lock, and drop and slide of escapement. Determines visually that hairspring is level and examines positioning of parts to determine that they are in beat, and that overcoil is in correct relationship to spring. Tests vertical play of wheels, (end-shake), using tweezers, to determine that it is within acceptable limits. Examines spring to determine that it is centered between regulator pins, and centers regulator lever. Examines movement and case for scratches, blemishes and finish. Determines accuracy of movement by running it for specified period in different positions. Dismantles faulty movements to point of error, records observations, and returns movements to appropriate department for reworking. Inspects oiling of pallet stones and jewelled bearings. Observes minute parts with aid of loupe. Inspects and adjusts watches after specified subassemblies have been added, such as barrel, train, and balance. Verifies parts dimensions, such as thickness, inside and outside diameters and length, for conformance to specifications, using precision gauges. Projects image of parts on screen and compares dimensions of blown-up shadow with its scale drawing to verify sizes, locations, and contours. Moves stem in and out to determine that it clicks into winding and setting positions, and turns stem in each position to test for ease of winding and setting. Winds mainspring to observe wheel characteristics, such as flatness of path and freedom of movement. Maintains statistical graphs and charts to provide visual comparison for quality control. Records number and type of defects found.

May perform leak test on waterproof watches. May inspect a particular part of watch during assembly or at certain time of assembly and be designated accordingly; for example,

Final Inspector
Hairspring Inspector
Hands Inspector
Mechanism Inspector

8526-258 HYDRAULIC TESTER(air & space-craft) DPT:384
GED: 4 SVP: 6 EC: 1 PA: L 3 4 7

Inspects and tests aircraft hydraulic, pneumatic and vacuum piping systems to detect damaged tubing, loose fittings and leaks:

Connects lines to equipment, such as pumps, gauges and flowmeters, using wrenches. Turns switches and valves to exhaust lines, or to charge them with gas or liquid. Observes dials and gauges on testing apparatus and inspects tubing to detect leaks and to verify specified pressures or rates of flow. Locks doors and hatches in pressurized fuselage and reads gauges to ensure effectiveness of sealing devices. Records observations and writes inspection and test report.

8526-262 TYPEWRITER INSPECTOR, PARTS AND ASSEMBLIES(mech. equip., n.e.c.) DPT:361
GED: 3 SVP: 6 EC: 1 PA: M 4 5 7

Inspects mechanical and electric typewriters, sub-assemblies and parts for conformance to specifications:

Inspects parts for defects, such as burrs, scratches or rust. Measures parts or assemblies for conformance to specifications, using drawings, micrometer, gauges and dial indicators. Examines angles and curves of parts, using profile gauges and protractor. Tests tightness of screws and nuts with screwdrivers and wrenches. Moves components of assemblies to detect binding, looseness or misalignment. Compiles records, charts and graphs of defects and notifies supervisor when rejects exceed specified limits.

May perform functional tests on typewriters following printed procedures.

8526-266 AGRICULTURAL-EQUIPMENT INSPECTOR(mech. equip., n.e.c.) DPT:364
GED: 3 SVP: 6 EC: B PA: L 4 5 6 7

Inspects agricultural equipment; such as, tractors, combines, rotary tillers, snow throwers, and balers for missing, defective, or improperly installed parts and for operational malfunctions:

Observes operation of equipment being driven around test area to detect defects; such as, loose fitting, improper assembly, malfunctioning parts or faulty controls as indicated by noise, leaks or irregularities in braking, steering or transmission mechanisms. Directs repairman to repair defective equipment, explains defects and suggests method of repair. Examines equipment for paint defects, rust-proofing, incorrect decal application, missing tools and faulty lights. Records cause, type of defect and repair work necessary. Adjusts governor on engine, using wrench, screwdriver and tachometer to regulate engine speed.

May specialize in inspecting various equipment; such as, snow throwers, rotary tillers, power lawn mowers and combines and be designated accordingly.

8526-270 BUSINESS-MACHINES TESTER(misc. prod. fab., n.e.c.) DPT:384
GED: 3 SVP: 6 EC: 1 PA: L 4 6 7

Examines and operates business machines, such as calculators, accounting machines and cheque encoders to verify correct operation and conformance to manufacturer's standards:

Plugs cord of machine into electrical outlet. Presses keys on keyboard and moves levers in prescribed sequence to test alignment of printing, repeat latch, ribbon and paper feed, correction release, noise, and clearance of type bars, according to checklist. Operates machines in test sequence and reads arithmetic results, recorded by machines, to verify accuracy.

May specialize in testing calculators, accounting machines, cheque encoders or other business machines, and be designated accordingly.

8526-274 TENSILE-STRENGTH TESTER(gov. serv.; wire prod.) DPT:384
cable tester; rope tester.
GED: 3 SVP: 6 EC: 1 PA: M 4 7

Conducts destructive tests on wire ropes to ensure conformance with government and industry standards:

Reads specifications of wire-rope sample to determine test procedures. Fastens cast metal sockets attached to end of rope to jaws of testing machine, using hoist and split clamps. Presses switches and moves levers to apply strain to rope for testing tensile strength and breaking point. Records gauge reading at breaking point of rope.

May cast metal attaching sockets to ends of rope sample. May apply strain to rope, representing specified loads, and measure rope diameter, using calipers. May examine ropes broken in regular usage for cause of failure.

8526-278 GASOLINE-PUMP TESTER(mech. equip., n.e.c.) DPT:381
gasoline-pump calibrator.
GED: 3 SVP: 5 EC: I 6 PA: H 3 4 6 7

Operates equipment to test and calibrate rate of flow of gasoline pumps to meet precise government specifications:
Transports gasoline pumps to test bench, using hoist. Verifies insulation and continuity of pump chassis and motor circuits, using electrical test equipment. Adjusts motor belt for specified tension by altering position of pulley, using wrench. Attaches pipelines from test equipment to pump, using hand tools. Starts pumps and turns valves to adjust revolutions per minute, pressure, and flow of gasoline, according to specifications. Reads gauges and listens to operation of pumps to detect malfunctioning units. Records gauge readings and rejects defective units.
May examine chassis for workmanship and proper assembly.

8526-282 PURCHASED-METAL-PARTS INSPECTOR(any ind.) DPT:364
outside-production inspector; resident inspector.
GED: 3 SVP: 5 EC: I PA: L 4 7

Inspects and tests a wide variety of purchased parts at sub-contractors' premises, for use in automobiles, aircraft, appliances, clocks and watches and other metal products, to ensure conformance to specifications:
Tests hardness of metal parts, using hardness tester. Measures dimensions, alignment, angles and radii of machined, stamped or die-cast components, using templates, gauges and fixtures. Examines welded or plated parts to verify specified standard of finish. Writes inspection reports, and advises sub-contractor and employer regarding contract requirements.
May release completed orders for shipping or specify reasons for rejection. May inspect purchased parts in own plant and be designated accordingly.

8526-286 PHOTOGRAPHIC-EQUIPMENT INSPECTOR (scient. & ind. equip., n.e.c.) DPT:384
GED: 3 SVP: 5 EC: I PA: L 4 7

Inspects still or movie cameras, flash units, enlargers, projectors and other photographic equipment for defects:
Examines equipment for defects; such as, missing parts, missing or incorrect serial numbers, incorrect fit of parts, flaws in finish and faulty action. Trips shutters to verify timing, using timing device. Measures focal distance of lenses, using depth micrometer. Tests electrical components, using electrical instruments. Inserts strip film or slides in projectors and tests operation by projecting picture on screen. Records rejects and reasons for rejection.
May make minor repairs or adjustments, using hand tools. May do minor touch up, using brushes and lacquer or paint. May inspect a particular item and be designated accordingly; for example, Camera Inspector
Projector Inspector

8526-290 SALVAGE INSPECTOR, INSTRUMENTS(scient. & ind. equip., n.e.c.) DPT:384
GED: 3 SVP: 5 EC: I PA: L 4 7

Inspects defective or obsolete instruments; such as, thermostats, cut-outs, altimeters and gyroscopes to determine their disposition:
Reads tag accompanying instrument to determine reason for rejection. Examines unit or parts to discover extent of damage or defect. Dismantles assembly into component parts and measures parts, using hand tools and gauges, to ascertain deviations from standards. Reads specification manual and parts book to assess alternatives of reuse, repair or scrapping of components. Writes appropriate information on tags to accompany parts. Sorts parts according to disposition and routes them to designated department. Inspects items returned under warranty to detect evidence of misuse. Writes reports detailing number and types of defects found and sends sample parts to quality control area.

8526-294 VENDING-MACHINE TESTER(misc. prod. fab., n.e.c.) DPT:384
GED: 3 SVP: 5 EC: I PA: L 4 7

Tests automatic vending machines for performance, and adjusts operating components:
Tests operating cycle of machine, using electrical timer. Tests wiring, using electrical test equipment to verify circuit continuity and insulation. Tests operation of coin-operating-and-return mechanism, using test coins. Adjusts or repairs faulty operating components, using hand tools. Rejects units requiring extensive repairs or refinishing.
May examine paint finish for blemishes, chips or other flaws. May inspect refrigerating units for gas leaks, using gas-detecting device.

8526-298 MATRIX INSPECTOR, PHONOGRAPH RECORDS (misc. prod. fab., n.e.c.) DPT:384
GED: 3 SVP: 4 EC: I PA: S 4 6 7

Inspects metal matrices used as dies in mass production of phonograph records for surface defects, using optical and sound reproducing equipment:
Places matrix on turntable and switches on audio amplifier and turntable. Measures width of grooves of matrix, using calibrated microscope or precision tester that measures lateral movement of stylus. Listens for audio defects in matrix, such as pops and ticks, and general audio quality, using stereo headset. Observes meter that records surface noise indication above specified acceptable level. Locates defects and marks location on matrix, using washable crayon. Records reasons for rejection and returns matrix for reworking. Tests reworked matrices to ensure defects have been corrected.

8526-302 TYPEWRITER TESTER(mech. equip., n.e.c.) DPT:384
functional tester, typewriters.
GED: 3 SVP: 4 EC: I PA: M 4 7

Tests manual or electric typewriters to evaluate their performance and detect malfunctions:
Types characters in prescribed sequence on sample sheet, either manually or using autotype machine, to evaluate functioning of parts. Examines sample sheet to detect misaligned type or improper spacing. Operates tabulators, carriage, platen and other parts to detect faulty action, such as binding or roughness. Indicates defects on inspection worksheet and returns machine for repair or adjustment.

8526-306 BICYCLE INSPECTOR(sport. & toy) DPT:387
GED: 3 SVP: 4 EC: I PA: L 4 7

Inspects bicycle and tricycle parts and assemblies, on production line, for conformance to specifications:
Examines part or assembly for defects; such as, dents, scratches, missing decals or incomplete fabrication. Inspects paintwork for conformance to colour and finish standards. Operates moving parts to detect binding or misalignment. Removes rejected items from line for repair or adjustment. Compiles records of rejects and reasons for rejection.
May touch up paint defects, using hand brush.

8526-310 METAL-FURNITURE INSPECTOR(furn.) DPT:587
GED: 3 SVP: 4 EC: I 5 PA: M 3 4 7

Inspects metal furniture for defects in construction or finish:
Verifies colour of furniture against work ticket specifications. Feels and inspects article for defective workmanship or damage; such as, unwelded joints, wrinkled or torn upholstery, paint flaws or scratches. Marks defective areas with chalk or crayon and segregates articles requiring repair. Records number of rejected pieces and reasons for rejection.
May hone rough spots, using hand stone or abrasive paper.

8526-314 SEWING-MACHINE TESTER(mech. equip., n.e.c.) DPT:584
GED: 3 SVP: 3 EC: I PA: L 4 7

Tests sewing machines and attachments:
Threads needle and bobbin of sewing machine and turns knob to adjust thread tensioner. Presses pedal to start machine. Feeds cloth under needle and sews stitches in cloth to test feeding and stitching

mechanisms. Moves controls to vary stitch pattern and type of stitch. Fits and operates machine attachments, such as hemming and button-holing devices to verify performance. Records test results and returns defective machines for rework. May mount sewing machine heads on cabinets prior to testing.

8526-318 PRESSURE-SWITCH TESTER(mech. equip., n.e.c.; scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Tests and adjusts pressure-operated switches or aneroid barometers: Couples air-line and electrical leads to pressure switch, using hand tools. Turns valve to raise or lower air pressure upon switch diaphragm to specified level. Observes gauge and switch contacts to verify opening or closing of contacts at specified pressures. Turns screw or bends arm of pressure switch, using hand tools, to ensure contacts open and close at required pressures. Loads racks of aneroid barometers into chamber. Closes glass door and turns screws to seal vacuum chamber. Starts vacuum pump to decrease pressure in chamber to specified level. Compares barometer readings with value shown on master gauge and notes instruments whose readings differ from standard. Routes acceptable barometers to packaging area. Resets calibrating screw on temporarily rejected instruments and loads them into chamber for re-testing.

8526-322 TIME TESTER, WATCHES(scient. & ind. equip., n.e.c.) DPT:585
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tends electronic timer that verifies accuracy of clock and watch movements: Positions movement in holding fixture of machine that automatically compares test beat with standard, and records discrepancies in beat. Records timing error and number of faulty movements. Returns inaccurate movements for correction, reworking and special testing.

8526-326 BALL-BEARINGS TESTER(mech. equip., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: S 4 6 7

Tends sound-testing equipment to detect defects in ball and roller-bearing assemblies and determines causes of defects: Turns dials on equipment to specified setting. Slides bearing onto adapter arm and presses button to start machine that rotates inner ring of bearing. Listens through headphones to detect sounds that indicate mechanical defect in bearing and to determine probable cause of defect or listens for bell and observes photoswitch light that indicates if rollers are missing inside bearings. Places defective bearings in box for scrap or salvage. Packs usable bearings into paper tubes and places them in cartons.

8526-330 HARDWARE, TOOL AND CUTLERY INSPECTOR(metal fab., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects articles; such as, can openers, hacksaw blades, hand tools and kitchen cutlery to detect manufacturing defects: Examines articles for surface defects; such as, scratches, nicks, defective plating or incorrect marking. Verifies dimensions of parts, using gauges, micrometers and other hand or dial type measuring instruments. Operates moving or adjustable parts of article to verify freedom of action. Examines cutting edges of tools, hacksaw blades and cutlery to ensure that manufacturing specifications are met. May be designated according to article inspected; for example, Cutlery Inspector
Hacksaw Inspector

8526-334 STRUCTURAL AND ORNAMENTAL-METALWORK INSPECTOR(struct., plate & ornam. metal) DPT:687
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Inspects structural and ornamental metalwork; such as, window screens, sashes, doors and shower enclosures for appearance and conformance to specifications: Inspects article for burrs, improper assembly, dents or torn screening. Tests alignment by sliding panels up and down. Verifies dimensions,

using gauges, steel tape or square. Returns defective items for repair or performs minor repairs; such as, rolling or hammering out small dents, filing burrs or tightening screws. May package article and hardware kit in cardboard container for shipping or storage.

8526-399 OTHER INSPECTING AND TESTING OCCUPATIONS, FABRICATING AND ASSEMBLING METAL PRODUCTS

This group includes metal product fabricating and assembling inspectors and testers, not elsewhere classified; for example, those who record performance of aircraft engines and accessories; sort metal-cartridge cases, using sorting machine; test food packaging equipment; test and prove gas meters; inspect roller-bearings; and test vibratory feeders, screens and oscillating conveyor equipment. Typical examples of occupational titles covered by this residual group definition are:

Aircraft-Engine-and-Accessories Inspector, Field(air & space-craft)
Cartridge-Case Sorter(explosives)
Food-Packaging-Equipment Inspector(mech. equip., n.e.c.)
Gas-Meter Inspector(elec. power)
Roller-Bearing Inspector(mech. equip., n.e.c.)
Vibratory-Equipment Tester(mech. equip., n.e.c.)

8527-PRECISION INSTRUMENTS AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with fabricating and assembling precision instruments and related equipment; such as, scientific and optical instruments; measuring, indicating and controlling instruments and equipment; surgical, medical and dental instruments and apparatus; photographic equipment; timepieces; and similar items. Activities include: fitting and assembling previously manufactured parts, installing components and assemblies, and adjusting and calibrating precision equipment, using a variety of common or special hand tools, and special test equipment. Occupations concerned with fabricating and assembling instruments for measuring, recording and controlling electrical characteristics are classified in Minor Group 853, FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT.

8527-110 SCALE CALIBRATOR(scient. & ind. equip., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: 1 PA: M 4 7

Calibrates electronic and mechanical weighing scales by performing any combination of the following duties: Mounts assembled scale indicating dial on calibrating fixture. Clips balance weights to dial assembly so that zero mark on dial matches calibrating mark on fixture. Sets dial or indicating needle of mechanical scales to zero reading by turning screw. Calibrates scales by placing standard weights on scale platform and reading to capacity of scale. Corrects false readings of scale by adjusting fulcrum position or lever length, using hand tools, or by adding lead shot to shot box. Seals shot box by hammering lead shot into orifice of box when scale calibration is completed. Examines electronic scales for missing or poorly aligned parts or unconnected wires and rectifies faults, using hand tools. Aligns light source, mirrors and prism of photo-electric cell and verifies that reading projected onto ground-glass screen is accurately focussed. Trips operating lever and inspects printed tag for alignment and legibility. Verifies scale functions through specified range, using check list. Connects leads of electronic test unit to specified test points on scale and places standard weights on scale platform. Reads dials of test unit and adjusts resistance units of scale, using screwdriver, to obtain specified meter readings. Turns controls of test equipment to simulate supply voltage variations and interprets oscilloscope pattern to determine if scale accuracy is maintained throughout tested range. Performs disassembly and test procedures as required by government scale inspector who certifies scales for commercial use. Repairs worn

and faulty scales. Instructs workers engaged in scale subassembly. Prepares scales for shipment by disconnecting and securing delicate parts of operating train, using pads, tie-wires and hand tools. May assemble electronic and mechanical scales as required.

8527-114 INSTRUMENT-PANEL ASSEMBLER-INSTALLER
(air & space-craft) DPT:381
GED: 4 SVP: 6 EC: I PA: L 4 7

Assembles and installs aircraft instrument panels:
Drills, reams, taps and countersinks holes, following drawings and diagrams, using jigs, fixtures and powered hand tools, to prepare panel for assembly and mounting. Rivets additional parts, such as stiffeners and mounting brackets to panel, using rivet gun. Installs instruments, switches, indicator, lights and identifying decals on panel in specified sequence, using rivets, screws, adhesives and hand and power tools. Installs electrical wiring harnesses, using clips or clamps, and attaches wiring leads to instruments, lights and switches by soldering or by connecting plugs and sockets. Attaches rigid and flexible tubing to panel frame, using clamps and connectors. Tests vacuum and pressure lines for leaks, and performs specified functional tests on instruments, using test equipment. Installs assembled panel in aircraft and makes final connections of instruments and components.

8527-118 SCALE ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:681
scale mechanic.
GED: 3 SVP: 6 EC: I PA: L 4 7

Assembles scales of various types, ready for calibration, from components and subassemblies:
Verifies by check-list that kit of parts is complete for scale to be assembled. Assembles parts and subassemblies; such as, base, levers, stirrups, pins, charts, indicators and pendulums into scale housing, using hand and power tools, fixtures, and gauges. Places lead pellets in shot-box to weight required for particular type of scale, to achieve approximate calibration subject to subsequent verification by supervisor. Drills holes, twists levers, hones pivots, and files parts, to ensure accurate clearances and alignment. Installs subassemblies; such as, computing unit, photo-electric cell, prism system, printer and read-out, on base of electronic type scales, and connects wiring harness, using diagrams, hand tools and soldering iron. Repairs worn and faulty scales by replacing parts and adjusting mechanism.

8527-122 HAIRSPRING TRUER(scient. & ind. equip., n.e.c.) DPT:381
GED: 3 SVP: 5 EC: I PA: S 4 7

Adjusts hairsprings to proper form:
Examines spring with watchmaker's loupe to determine if center coils appear as perfect circles. Bends inner coil of spring away from or toward collet, using truing tool, to locate center of collet in center of spring, and to correct errors resulting from faulty collecting of coil. Estimates space between collet and first inner coil to determine if it is within acceptable limits.
May form overcoils and be designated accordingly,
Hairspring Overcoiler

8527-126 LASER-TUBE ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:681
GED: 3 SVP: 5 EC: I 6 PA: L 4 7

Assembles tubes for laser units:
Measures tubular stems at ends of laser tube, using calipers, and cuts stems to specified length with diamond saw. Brushes grinding tool with abrasive solution and grinds bevel at tube stems to accommodate reflector plugs. Cements coated reflector plugs with slow-drying cement to facilitate subsequent alignment of reflectors. Presses plugs into place on stems. Seals evacuating stem of laser tube to glass tube of vacuum exhausting device, using gas flame. Starts pump to evacuate air from tube. Stops evacuating pump when specified degree of vacuum is attained and opens valve to fill laser tube with neon-helium gas. Seals exhausting and gas entry orifices, using gas flame. Passes sealed laser tube to technician for optical alignment of reflector plugs. Fits electrodes over laser tube following alignment and presses switches to cause tube to emit laser beam. Places light meter in laser beam to measure beam intensity and manipulates reflector plugs to achieve maximum output.

8527-130 TEMPERATURE-CAPILLARY CHARGER(scient. & ind. equip., n.e.c.) DPT:582
GED: 3 SVP: 5 EC: I 4 6 7 PA: L 4 7

Fills temperature capillary systems with liquid or gas:
Fits bulbous end of capillary tube into vacuum orifice of exhausting and charging panel and turns screw to seal joint. Starts pump to exhaust air from capillary for specified period. Pulls lever to insert tapered plug into hole in bulbous end and to seal capillary. Removes capillary unit from exhausting orifice to appropriate charging orifice of panel. Turns valves to admit filling medium to charging chamber, pulls lever to remove plug from bulbous end, allowing capillary system to fill. Pulls lever to seal opening in bulbous end of capillary, and starts pump to return excess filling medium to holding tank. Removes capillary system and mounts it in fixture which registers movement of bellows, bourdon tube, or diaphragm at other end of capillary. Submerges bulb alternately in water tanks maintained at specified temperature differentials, and reads dial of fixture to verify accuracy of capillary system. Compiles sheet specifying kind of liquid, vapour or gas contained in system, and records test readings obtained.
May attach bellows, bourdon tube or diaphragm end of system to back plate of control or indicating unit, using screws, bolts and hand tools.

8527-134 AUTOMATED-VALVE ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I PA: M 4 7

Assembles flow-control valves and valve-actuating equipment, performing any combination of the following duties:
Fits, bolts and screws parts; such as, stems, springs, cages, plugs, packing-nut washers, covers and top plates to valve housings, using hand tools and assembly fixtures. Brushes gasket-bonding material on mating surfaces as specified. Assembles shafts, bearings, motors, switches, arms and cams to make step-control assembly. Fits step-control to valve and bends switch contacts to adjust on and off sequence. Switches motor on and off to set cam at low point and limit-screw at high point. Positions test fixture over step-control, starts motor, and observes indicator lights to verify cut-out and cut-in of each switch position in sequence. Brushes locking compound on adjustment screws. Connects wires to terminals, using soldering iron. Mounts parts; such as, brackets, step-control assemblies, terminal blocks, wiring and plug connectors to valve housings, using bolts, screws, hand tools and soldering iron. Clamps valve in test fixture and attaches electrical supply leads and liquid pressure lines to valve. Turns liquid supply valve to regulate pressure to specified figure and observes closed automated-valve assembly for leaks. Drills holes with portable drill in specified positions on valve housings and mounts identification and instruction plates with screws.

8527-138 CLOCK AND WATCH ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I PA: S 4 7

Assembles spring-driven movements for watches and clocks, by performing any combination of the following duties:
Installs balance wheel assembly, lever, escape and train wheels, mainspring barrel, winding and setting mechanism, bridges and plates, using watchmaker's hand tools and loupe. Verifies endshake and other clearances by moving parts with tweezers. Determines that balance spring is concentric, in parallel plane and between regulator pins. Moves regulator arm to central position, and adjusts balance spring by bending slightly with tweezers. Lubricates movement, using oiling needle. Observes action of movement, and makes adjustments such as truing balance or bending banking pins, or replaces defective parts. Secures dial, using screws, or by crimping pre-formed lugs in slots. Installs hands in correct relative positions, using staking press or special hand tool, and adjusts clearances between hands and face by slight bending with tweezers. Adjusts setting of alarm hand, when assembling alarm clocks, to co-ordinate with alarm release mechanism and hour hand.
May assemble a particular part or subassembly of watch or clock and be designated accordingly; for example,
Balance-Wheel Assembler
Mainspring-Barrel Assembler

8527-142 HEAT-SENSOR ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Assembles immersion heat-sensing devices:

Cuts lead wires to specified length, using cutters. Connects lead wires to ends of precut sensing-element wire, using silver solder and gas torch. Pulls precut insulating sleeve over sensing-element wire, and slides precut metal tubing over sleeve. Crimps ends of metal tubing, using hand tool. Bends sensing element by hand, using former, and inserts element into perforated metal tube. Places assembly in water bath maintained at specified temperature, and attaches leads to ohmmeter to determine that element resistance is as specified. Coats perforated tube with ceramic compound, using brush, and places element in oven to bake ceramic. Inserts ceramic-coated assembly in stainless steel or platinum tube, and seals open end, around lead wires, with silicon compound.

8527-146 PUT-IN-BEAT ADJUSTER(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Adjusts positioning of hairspring collet on watch balance assembly:

Positions balance wheel and spring assembly in fixture of special tool, using tweezers. Engages locking device with crescent of roller to prevent balance wheel, staff and roller from turning. Engages special tool with slot in hairspring collet. Turns collet on balance staff so that stud on outer coil of hairspring is aligned with indicator on fixture, ensuring impulse-roller and hairspring stud are in correct relative positions, and watch escapement will be in-beat when assembled.

8527-150 THERMOSTAT-AND-PRESSURE-SWITCH CALIBRATOR(scient. & ind. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Calibrates heat or pressure-actuated devices, such as thermostats, gauges and switches, by any of the following methods:

Positions device to be calibrated in holding fixture, according to whether calibration is to be performed by immersion of capillary in controlled-temperature bath, application of air pressure, or mechanical measurement: 1. Turns valves and dials to regulate temperature of liquid in baths to specified level, using master thermometer. Immerses capillary of device to be calibrated in baths of different temperatures, alternately or in specified sequence. Turns adjusting screws or bends operating parts until indicating dial reads correctly, or until contact points open and close at specified temperatures. 2. Connects compressed-air supply line to bellows or bourdon tube of device to be calibrated or to pressure gauge under test. Turns valve to admit specified air pressure. Measures movement of actuating devices, using dial gauge, or compares gauge reading with master gauge and turns adjusting screw, or bends parts, until indicating pointer of device reads specified temperature or pressure, or until contact points open or close at specified temperatures. 3. Observes action of contact points, working under temperature-controlled conditions, by moving control dial, and adjusts parts; such as, differential arms, levers, springs and blades by bending parts or turning adjusting screws, using hand tools, until contact points open or close at specified settings of control dial. Verifies gap between contact points at specified dial settings, using feeler gauges.

8527-154 DIE-CASTING ASSEMBLER, CLOCK PARTS(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: 1 5 6 PA: L 4 7

Operates die-casting assembly machine that casts pinions and attaches them to clock wheels:

Places clock wheel in recess in die, using tweezers. Depresses foot pedal to feed attaching wires to intermediate stop position in die. Depresses second foot pedal to raise and seal die against moulding pot, and drive attaching wires into wheel. Presses plunger with hand to inject molten metal into die and cast pinion around wires. Pulls lever to cut wires and eject completed wheel and pinion. Cleans injection nozzle as required, using leather wiper. Inspects finished assemblies for casting flash or pits. Replenishes melting pot with metal ingots.

8527-158 PHOTOGRAPHIC-EQUIPMENT ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: 1 PA: L 4 7

Assembles components and sub-assemblies of photographic equipment; such as, still cameras, movie cameras and projectors:

Screws, rivets, and otherwise fastens and installs parts, following assembly diagrams and verbal instructions, using hand and power tools, on progressive assembly line. Operates sub-assemblies and assemblies to test for proper functioning, using test fixtures and equipment, as specified.

8527-162 SOLENOID-VALVE ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: 1 PA: S 4 7

Assembles a variety of solenoid valves used to control flow of liquids or gases:

Slides or presses parts; such as, seals, washers, rings, collars and springs onto valve stem or plunger, using fingers and appropriate assembly fixtures. Inserts plastic-encapsulated solenoid coil into valve body and clamps body in fixture. Inserts assembled valve stem or plunger through coil into valve body, and seats seals and brass bushing in body around valve stem or plunger, to seal opening, using special hand tool and hammer. Stamps inlet and outlet markings on valve body, using dies and hammer, and attaches self-adhesive identification label.

8527-166 CLOCK-AND-TIMER-MOVEMENT ASSEMBLER, AUTOMATED LINE(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles spring-operated movements for clocks and timers on automated assembly line, by performing any combination of the following duties:

Places parts, such as plates, train wheels, springs, escapements, regulators, and shut-off levers in specific positions in conveyor pallet, or in partially assembled mechanism, during conveyor stop cycle, using tweezers to place parts, and air-powered tool to tighten pillar nuts. Positions balance wheel bridge and stakes bridge, using foot operated press. Lubricates movement, using oiling needle, and moves parts with special tool or tweezers to verify proper endshake and other clearances. Places completed movement in box ready for final assembly.

8527-170 CLOCK AND WATCH FINISHER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Installs movements in cases and performs final assembly of clocks and watches by any combination of the following duties:

Fits watch cases face up in press fixture, and places watch crystal face up on case. Operates press to snap crystal into holding groove of case, by pressing pedal. Removes foreign particles from clock and watch cases, using air jet. Fits assembled movement in case in correct position to receive winding stem and inserts stem through hole in case, or manipulates stem into case slot, according to design. Fits mainspring, alarm and hand-adjusting keys and knobs to squared or threaded shafts. Tightens stem retaining screw, using screwdriver and watch-maker's loupe, and ensures that stem operates both spring and hand-setting mechanism as required. Tightens screws which secure movement to case. Screws or snaps back plate onto case, using wrench or press. Inspects crystals, case and back for surface imperfections. Attaches wristbands to watches by fitting spring-loaded pins through band loops to case lugs, by threading band through gaps in case lugs and crimping metal ring around band overlap, or by crimping links between band and case lug pins.

May mount timepieces in display boxes and pack boxes into shipping cartons.

8527-174 COMPRESSED-AIR-AND-GAS-REGULATOR ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles and tests compressed air and gas flow regulators used with underwater, industrial, or medical respiratory equipment:

Inspects regulator body and removes burrs resulting from drilling operations, using hand pick and file. Clamps body in holding fixture.

Picks up diaphragm and positions plastic seats and rings in specified slots. Inserts diaphragm assembly and other components, such as springs, retainers and seals, into body, and screws regulator stem and handle into place. Inserts and tightens holding screws in regulator body, using screwdriver. Screws gauge or protective plugs into auxiliary ports of unit and tightens them with wrench. Connects assembled regulators to test equipment and master gauge, and turns test valve to admit air pressure. Brushes soapy solution over surfaces of regulators to detect leaks. Turns regulator handle and compares gauges to verify correct regulator operation.

8527-178 DIAL INSTALLER, CLOCK AND WATCH(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Installs dials and hands on clocks and watches:
Places movement in holding fixture, and installs hour wheel and spacing washers over cannon pinion, using hand tools. Installs dial on movement by inserting dial feet to holes in plate. Inserts feeler gauge between dial and faceplate of movement to ensure correct clearance, and tightens screws to secure dial. Installs hands, using staking tool, and sets hands in correct relationship to each other.

8527-180 DIAL MARKER (scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Draws scale markings by hand on instrument dials:
Measures and marks specified number of increments between calibrations on dial, using dividers. Draws scale according to markings, using special pens, and ink to contrast with dial. Stamps outline of numbers on scale, using rubber stamp, and fills in outlines with ink. Marks danger points on scale in red.

8527-182 ELECTRIC-CLOCK ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles electric clocks, by performing any combination of the following duties:
Assembles dial or faceplate, frame and gear train from plates, pillars, prestaked gears and shafts, using assembly fixtures, bolts, screws and hand tools. Fastens electric motor to frame, using screws and screwdriver. Inspects components visually during assembly for defects and to ensure appropriate clearances for free movement. Lubricates gears and pivots, using small brush or oiling needle. Installs power cord to motor leads, using insulated twist connectors. Installs hour, minute and second hands by pressing them onto respective arbors or shafts, using special hand tools. Installs light-bulb sockets, light bulbs, decorative components and alarm mechanisms according to type of clock being assembled. Plugs clock into power supply, verifies operation of clock and adjusts tone and volume of alarm by turning eccentrically-mounted bell. Ensures that alarm operates at correct indicated time. Stops alarm and determines that clock operates quietly.

8527-186 HAIRSPRING CALIBRATOR(scient. & ind. equip., n.e.c.) DPT:684
hairspring vibrator.
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Calibrates and cuts hairsprings of watch balance-wheel assemblies to required vibrating length, by either of the following methods:
1. Fastens free end of hairspring in holding fixture of electronic calibrating machine, using tweezers. Raises bed of machine until it supports lower pivot of assembly, causing vertical swings of assembly to become horizontal swings, as indicated on cathode-ray screen. Continues to raise bed, automatically winding excess length of hairspring into holding fixture, until vibrating point (point at which length of spring is such as to cause attached balance wheel to oscillate at specified rate) is located, as determined by screen readings. Moves lever to cut excess spring from assembly. 2. Positions balance-wheel assembly in holding fixture of automatic, electronic calibrating machine, using tweezers. Turns balance wheel and threads free end of hairspring through drawing rollers. Moves lever to start machine that automatically draws spring through rollers, locates vibrating point, and stops when point is located. Moves lever to cut excess spring from assembly.

8527-188 STAKER, SMALL PARTS(scient. & ind. equip., n.e.c.) DPT:684
jewel staker.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Operates staking press to assemble small parts; such as, cams, gears, shafts, dials and indicating needles, or to install jewelled bearings in bridges and plates, for use in instruments, measuring and controlling devices, and timepieces:
Places machined parts to be assembled, in specific relationship to each other, in fixtures and holders installed in staking press, using tweezers, loupe, or magnifying lens fixture. Pulls hand lever of press down to preset stop, to insert and force-fit one part into the other, or to spread edge or shoulder of one part in riveting action.

8527-190 LEVEL-VIAL SETTER(misc. prod. fab., n.e.c.) DPT:684
level setter.
GED: 2 SVP: 2 EC: 1 PA: L 4

Mounts glass vials in bodies, frames or cases to make spirit levels:
Inserts vial manually in opening of body, frame or case, and secures vial in approximate position with wedges or clamp. Mixes small quantity of plaster and water to desired consistency. Clamps frame, body or case in pre-levelled bench fixture and applies plaster around enclosed vial, using trowel or spoon. Removes vial wedges or clamp and adjusts vial to center bubble. Smooths and removes excess plaster.

8527-192 PRECISION-PRESS OPERATOR(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Operates small air-powered press to fabricate minute parts used in the manufacture of pocket watches and small clocks:
Places parts; such as, balance wheels, hour hands, hairsprings and collets, and mainsprings, in holding fixture in bed of press, using tweezers. Depresses foot pedal to actuate ram containing fine tool, that performs single or combined operation; such as, piercing, sizing, trimming, forming or press-fitting, in single stroke.
May use loupe to make sample visual inspection of parts at intervals.

8527-194 REGULATOR, TIMEPIECE(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Determines timekeeping accuracy of spring-driven watches, clocks and timers, and adjusts regulators to obtain specified performance:
Winds timepiece by hand or winding device, and sets time to agree with master timer. Places timepiece on rack for specified period. Compares time indicated at end of period with master timer, and selects units within specified limits of deviation. Rewinds units not within limits, and adjusts regulators, using pointed tool. Replaces adjusted units on rack for further specified period and comparison.

8527-198 THERMOSTAT-CAPILLARY SEALER(scient. & ind. equip., n.e.c.) DPT:684
bellows crimper.
GED: 2 SVP: 2 EC: 1 4 PA: L 4

Crimps and solders end of liquid-filled capillary tubes used for thermostatic controls:
Lifts exposed open end of capillary tube from non-powered rotating fixture submerged in temperature-controlled water tank. Raises end of tube into crimping fixture up to end stop. Depresses foot pedal to crimp end of tube. Releases pedal, lowers tube, and solders crimped end, using gas torch. Allows tube to drop back into fixture for removal by another worker.
May load and unload capillary tubes from submerged fixture.

8527-299 OTHER PRECISION INSTRUMENTS AND RELATED EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS

This group includes precision instrument and related equipment fabricating and assembling workers, not elsewhere classified; for example, those who assemble film processing units, assemble and mount lenses for optical apparatus, make surveyors' tapes, assemble

and calibrate speedometers, calibrate glass vessels, and adjust timing of clocks and watches. Typical examples of occupational titles covered by this residual group definition are:

Clock Magnetizer(scient. & ind. equip., n.e.c.)
Escape-Spring Adjuster(scient. & ind. equip., n.e.c.)
Film-Processing-Unit Assembler(scient. & ind. equip., n.e.c.)
Glass Calibrator(scient. & ind. equip., n.e.c.)
Optical-Instrument Assembler(scient. & ind. equip., n.e.c.)
Speedometer Assembler and Calibrator(scient. & ind. equip., n.e.c.)
Surveyors' Tape Maker(scient. & ind. equip., n.e.c.)
Timing Adjuster(scient. & ind. equip., n.e.c.)

8528-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, FABRICATING AND ASSEMBLING METAL PRODUCTS, N.E.C.

This unit group includes occupations, not elsewhere classified, in labouring or other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), concerned with fabricating and assembling a variety of metal products.

8528-110 TINWARE WORKER(metal stamp., press. & coat.)
DPT:687
GED: 1 SVP: 2 EC: 1 5 6 PA: M 3 4

Performs any combination of the following duties involved in the manufacture of tin cans:

Unpacks bundles of tinplate sheets by removing binding wires, using wire cutters. Examines tinplate sheets visually to detect surface defects. Removes dents from sheets, using wooden mallet. Sorts tinplate sheets according to size and thickness. Stacks defective sheets by hand and places them in reject pile on pallet. Removes lithographed tinplate sheets from drying oven and stacks on pallets. Packs lids or cans in cartons or bags, manually or by automatic machine. Lines inside of railroad cars or transport trucks with paper, to prevent damage to cans, by stapling paper to walls and floor. Stacks cans in railroad cars or transport trucks with can fork. Fastens braces of wood or metal to sides of freight car to keep bulk-packed cans in place. Collects and discards spoiled tin sheets and cans by pitchforking them from scrap containers into scrap truck. Pushes scrap trucks to chutes and dumps scrap into open freight cars or trucks for disposal. Maintains supply of packaging material by transporting it from storage area, using handtruck. Moves tinplate, cans and other materials between work stations, using handtrucks, electric trucks or chain hoists. Cleans assigned work area.

May keep record of material used and packed. May be designated according to specific duties performed; for example,

Line-Setter, Hustler
Packer, Lids
Plate Sorter
Tinplate Bundler-Hustler

8528-114 WEDGER, MACHINE(misc. prod. fab., n.e.c.)
DPT:887
GED: 1 SVP: 2 EC: 1 5 PA: L 4

Mounts tools, such as axes, hatchets and hammers on wooden handles:

Inserts slotted end of handle into eye of tool. Places head of assembled workpiece under power hammer and depresses foot pedal to drive tool head onto handle. Inserts wooden or metal wedge into handle slot and depresses foot pedal to force wedge into place.

8528-199 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, FABRICATING AND ASSEMBLING METAL PRODUCTS

This group includes metal products labourers and other elemental workers, not elsewhere classified; for example, those who attach handles to metal pails. A typical example of an occupational title covered by this residual group definition is:

Pail-Handle Inserter(metal stamp., press. & coat.)

8529-OTHER FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with fabricating and assembling metal products.

Wire Products Fabricating and Assembling Occupations, n.e.c. 8529-110 through 8529-126

8529-110 CYLINDER-ROLL FABRICATOR(wire prod.)
DPT:684

dandy-roll fabricator; seamer.

GED: 3 SVP: 7 EC: 1 PA: M 3 4 7

Fabricates cylinder rolls used in paper processing by cutting, honing, fitting and brazing fine wire cloth to specifications:

Places specified type of wire cloth on cutting table. Lays out cutting lines, using straightedge, rulers or pattern, and cuts wire cloth between parallel wire of weave or along edge of pattern, using shears. Examines sheared edge, using magnifying glass or binocular microscope. Hones edges to prepare cloth for seaming. Fits wire cloth around cylindrical screen frame, smooths contours by hand and aligns edges for brazing. Attaches leather straps to hold cloth in position for brazing. Operates torch to braze or solder seam, using specified filler material and flux. Files and hones seam to blend contour and prevent seam from showing during paper processing operations.

8529-114 MESH-WELDING-MACHINE OPERATOR(wire prod.)
DPT:682
loom operator, electric.
GED: 3 SVP: 4 EC: 1 5 6 PA: M 2 3 4

Operates mesh-welding machine to produce wire-mesh screening used in the manufacture of products such as, concrete re-enforcing material, industrial tote boxes, or wire-wall enclosure:

Studies work order and gathers hanks (coils) of wire required to produce mesh screening. Sets up and operates straightening machine that cuts shoot wires (straight screen wires) to specified length, using hand tools and rule. Manually loads shoot wires into mesh welding machine feed hopper and warp wires (lengthwise thread wires) onto machine feed rolls. Sets up mesh-welding machine by installing specified guides, adjusting welding electrodes, and positioning securing magnets, using hand tools and measuring devices. Operates machine manually for trial period and examines output for quality standards, using specifications, rulers and micrometers. Repositions machine control switch from manual to automatic and operates machine to produce specified amount of rigid wire-mesh screening.

8529-118 STEEL-WOOL-MACHINE OPERATOR(wire prod.)
DPT:682
GED: 3 SVP: 4 EC: 1 PA: M 4

Operates machine that shaves steel wire to form steel wool:

Mounts spool of flat steel wire on machine, using electric hoist. Installs specified cutting tools in machine toolholder, using hand tools. Turns controls to adjust depth of cut according to specifications. Operates control switches to start machine and threads flat wire stock through automatic feeding mechanism. Turns valves to control cooling agent to each cutting tool. Observes strands of cut wire moving to catch basin to form rolls of steel wool. Repairs breaks in strands by splicing ends together, manually. Welds new spool of flat-steel wire to end of used spool, using butt-welding machine. May thread steel strands through guides to steel wool ball-making machine for subsequent processing into soap pads.

8529-122 WIRE-CONVEYOR-BELT BUILDER(wire prod.)
DPT:684
GED: 2 SVP: 3 EC: 1 PA: H 4

Builds wire conveyor belts by assembling spiral wire coils and metal rods to side plates prior to brazing by other workers:

Removes spiral wire coils and metal rods with one end crimped from hoppers of wire-forming and rod-crimping machines. Aligns ends of coils with previously positioned coils on worktable and trims to length, using pliers. Joins coils by inserting straight end of rod through coils

and crimping rod ends, using crimping tool. Connects crimped rods to side plates to prepare wire conveyor belt assembly for final brazing operations. Builds up specified length of belt and bends back protruding ends of coils or rods, using pliers. Measures completed assembly with ruler and gauges for conformance to specifications. Moves conveyor belt assemblies to designated work areas, using electric hoist.

8529-126 WIRE-MESH-GATE ASSEMBLER(wire prod.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4

Fabricates metal products, such as barriers, frames, or gates, by assembling pipe stock, special fittings and wire mesh fencing: Cuts pipe stock to specified size, using pipe cutter. Inserts pipe ends into corner fittings and verifies framework dimensions against template. Drills holes through pipe and fittings, using power drill. Bolts pipes, fittings and required braces together, using power wrenches. Cuts wire mesh to size, using wirecutters. Inserts metal straps into terminal links of wire and fits clamps around metal straps and framework. Stretches wire and bends clamps around framework, using ratchet tool. Smooths welded pipe joints, using hammer, chisel and files, and paints joints to retard rusting. May install hinges, ornamental castings, or signs on gates or barriers, using power drill and hand tools.

Ammunition Fabricating and Assembling Occupations, n.e.c.
8529-146 through 8529-158

8529-146 SALVAGE-MACHINE OPERATOR(explosives) DPT:682
GED: 3 SVP: 4 EC: I 5 6 PA: L 4

Operates machines that disassemble rejected cartridges to salvage metal parts: Replaces or adjusts punches, fingers, dies, feedplate, and shell holders, using hand tools. Turns setscrews and stopnuts, using wrenches and screwdrivers to adjust ratchets, springs, gates, and pulldown mechanisms to accommodate calibre of cartridge being processed. Starts machine, by activating switch, and feeds cartridges into slot in dial feed plate by hand. Shakes empty cases in hand tumbler to remove powder. Weighs scrap and components on scale and records weight on production sheet. May insert cartridges in jaws of bench device and pull lever to extract bullet. May sort and tag components salvaged for further processing.

8529-150 BURNING-GROUND ATTENDANT(explosives) DPT:684
GED: 2 SVP: 3 EC: O 6 PA: H 4

Reclaims usable metal parts, and destroys waste ammunition powders, defective ammunition components or waste commercial explosives by either of the following methods: 1. Disassembles defective ammunition components, such as boosters, fuses, and shells, to reclaim usable parts, using hand and power tools. Transports waste explosive powders and defective ammunition components to burning area, by truck. Closes barrier and raises red flag to warn other employees of danger. Places powder on specified sites according to safety regulations, buries loaded shells in sand pit to retain fragments and places detonators, fuses and primers into pan filled with fuel oil. Positions electric detonators near waste material and connects wires to remote control firing device. Ensures area is completely free of personnel and detonates charge by remote control. Loads scrap metal into truck for salvage and cleans area, using rake and shovel. Records quantity and nature of powder and ammunition destroyed. 2. Transports waste commercial powders to burning area, by truck. Closes barrier and raises red flag to warn other employees of danger. Spreads powder and paper on ground according to safety regulations. Ignites powder and monitors burning operation to ensure powder is completely destroyed.

8529-154 METALLIC-CUP-MACHINE TENDER(explosives) DPT:685
cup-forming and trimming-machines tender.
GED: 2 SVP: 3 EC: I 5 PA: M 4

Tends machines that produce metallic cups for bomb and shell detonators by either of the following methods: 1. Places reel of strip metal on spindle of automatic press. Threads end of strip into machine feeding mechanism. Presses button to start press that forms metallic cups to specified size. Observes machine operation and advises superior in case of machine malfunction. Loads metallic cups into metal baskets. Immerses cups into degreasing compound and air dries them prior to subsequent loading operations or storage. 2. Inserts unfinished metallic cups into feeding mechanism of automatic lathe. Presses button to start machine that trims cups to specified size. Verifies dimensions of cups, using gauges and micrometer and discards defective cups. Loads acceptable cups into hopper of finishing mill and adds abrasives and soap. Pushes button to start machine that polishes and washes machined cups. Turns valve to rinse cups with water. Places rinsed cups in drying oven prior to subsequent loading operations or storage.

8529-158 SHAKER-PLATE TENDER(explosives) DPT:685
shell-sieve tender.
GED: 2 SVP: 2 EC: I 5 6 PA: L 4 7

Tends shaker machine that positions small arms cartridges or components in specially holed plates and shakes out loose foreign matter: Places shaker screen on shaker bed and scoops bullets or cases onto screen. Starts machine that shakes screen to remove foreign matter and tumbles primed cartridge cases or components into holed plates, or shakes screen by hand. Stops machine and shakes plate manually to invert deflected parts, or brushes bullets or cases into holes of plate, using gloved hand. Examines cartridges and components for defects, such as dents, burrs, scratches, and reversed or missing parts, using magnifying glass. Removes defective parts, using tweezers or pick. Positions transfer plate on top of charge plate and inverts charge plate to position bullets noses up. Places filled plates on conveyor that immerses bullet noses in lubricant to coat bullets, preventing lead deposits within weapon bore when fired. May record quantity of rejections according to type of defect.

**Miscellaneous Metal Products Fabricating
and Assembling Occupations, n.e.c.**
8529-178 through 8529-299

8529-178 DIAMOND-SAW MAKER(metal fab., n.e.c.) DPT:381
GED: 4 SVP: 7 EC: I 5 PA: M 4 7

Manufactures or rebuilds large reciprocating or circular diamond saws used in cutting stone, concrete or similar materials: Reads work order to determine operating instructions. Prepares steel blade for insert setting by operating rotary wire brush to remove rust. Lifts blade onto steel table manually or by operating electric hoist. Removes worn diamond inserts from repairable saw blade, using welding torch, hammer and drift. Straightens circular saw blade, using hammer, straightedge and knowledge of process. Places diamond bearing inserts in saw blade. Positions flux and brazing strips and sets diamond insert into position, using self-centering jig or by tapping with hammer. Files or grinds end of insert and brazing strip, using knowledge of process, to produce a circular saw blade which will run true at specified operating speed. Operates welding torch to braze segments into position.

8529-182 GUN ASSEMBLER(metal fab., n.e.c.) DPT:381
small-arms-final assembler.
GED: 3 SVP: 6 EC: I PA: L 4 7

Assembles small arms; such as, revolvers, rifles, shotguns and air or gas-powered guns: Verifies dimensions, fit and appearance of parts and subassemblies, using fixed gauges. Files, scrapes and reams parts as required, using hand tools. Screws and bolts together parts; such as, barrel, stock, receiver and sight, to assemble weapon, using hand and power tools. Tests action of weapon to detect malfunctions. Disassembles defective weapons and makes necessary adjustments. May mount and align telescopic sights. May test action of weapon,

using dummy ammunition. May touch-up paintwork on weapons, using brush or spray gun.

8529-186 CASKET ASSEMBLER, METAL(metal fab., n.e.c.) DPT:682

GED: 3 SVP: 6 EC: 1 5 PA: H 3 4 7

Assembles and shapes metal sheets to form metal caskets; Operates power presses to cut and shape sheetmetal for casket assembly according to specifications. Places sheetmetal sections into jigs to form casket and lid. Solders joints, using soldering iron, and smooths rough joint surfaces, using grinder or file. Saws wooden slats to specified dimensions to form wooden frame for casket interior, using handsaw and jointer. Bolts slats to flanges on casket and lid, using hand tools. Fits lid to casket. Bends casket flange by hand to ensure tight fit. Sprinkles powder on mating surfaces, to provide visual proof of tight lid fit. Drills and bolts hinges to lid, using power drill. Welds hinges to casket, using electric spot-welding machine.

8529-190 METAL-SHEATHED-INSULATION MAKER(asbestos & min. wool) DPT:682

GED: 3 SVP: 4 EC: 1 5 6 PA: M 4

Operates a variety of machines to produce metal-sheathed insulation for exterior industrial piping; Reads work order and requisitions materials; such as, sheet aluminum, steel or stainless steel, pipe insulation, and adhesive. Operates shear to cut sheets to specified size. Operates roll-forming machine to form sheathing of appropriate diameter. Operates punch press to produce metal locking straps. Operates mixing unit to mix adhesives to specifications. Brushes adhesive on interior of sheathing, positions insulation halves as specified and closes utilizing flanges. Packs piping insulation and appropriate number of locking straps into cartons. May work as part of a two-man team and operate machines to produce corrugated or flat metal coverings used to protect insulation on exterior industrial equipment.

8529-194 FURNITURE ASSEMBLER, METAL(furn.) DPT:684

GED: 3 SVP: 4 EC: 1 PA: M 4

Assembles metal furniture by performing any combination of the following tasks: Reads specifications, work orders, or sketches for assembly instructions. Drills holes in parts or items; such as, back-rests, covers, seats, metal cabinets, bookcases and filing cabinets. Fits parts together and fastens them temporarily with clamps. Assembles components; such as, desk tops, seats, arms or head rests. Bolts or screws parts together, using hand tools such as pliers, wrenches, ratchet and pneumatic screw-drivers. Refits components which fail to assemble, using file, hacksaw or drill. Rivets parts together, using hand or pneumatic hammer. Inserts parts; such as, casters, drawers, shelves, slides, slide locks, and scuff plates into holes or slots. Bends fastening devices and fits interlocking parts together with hammer or rubber mallet. Applies cement to cushions and covers, using brush or spray gun, and joins parts by hand. Inserts drawers into slides, and adjusts slides to fit drawer surfaces. Examines completed work and marks defects in finish for attention of other workers. May assemble parts on an assembly line, or assemble particular type of furniture, and be designated accordingly; for example, Hydraulic-Chair Assembler Locker Assembler Metal-Cabinet Assembler Metal-Table Assembler Office-Chair Assembler Production Worker

8529-198 METAL-PRODUCTS ASSEMBLER(struct., plate & ornam. metal) DPT:684

GED: 3 SVP: 4 EC: 1 PA: M 4

Assembles standard or custom metal components and products; such as, structural assemblies, awnings, metal sashes, shower doors, aluminum doors and aluminum windows by performing any combination of the following tasks: Reads specifications or work orders for assembly instructions. Operates sandblasting equipment to frost or cut decorative designs in glass panels. Assembles and aligns predrilled frame components in jigs or fixtures and fits edges, using grinder or file. Bolts, screws or rivets

frame together, using hand tools or hand riveter, and installs hardware such as, locks, hinges, or catches. Cuts channels, mouldings or panels to length, using punch cutter or cutoff saw, and installs according to specifications. Assembles metal or vinyl framing for glass windows or shower panels by positioning frame, using hammer. Installs glass windows or shower panels in component channel assemblies. Cuts screen to size, using knife. Positions screen over opening, rolls edge into groove and rolls plastic or metal spline into groove to secure screen, using disk roller. Attaches tag or sticker to workpiece and examines completed assembly, marking defects for attention by other workers. May assemble plywood sliding doors. May be designated according to type of product assembled; for example, Aluminum-Door-and-Window Assembler Awning Assembler Shower-Door-and-Panel Assembler Window-and-Screen Assembler

8529-202 ARBOR-PRESS TENDER(any ind.) DPT:685

GED: 3 SVP: 4 EC: 1 PA: M 4

Tends power-arbor press to press-fit parts; such as, bearings, gears, armatures and wheels, to housing, shafts or axles: Reads work order and installs specified holding fixture, die or arbor in press, using hand tools. Positions parts in holding fixture on press bed under ram, manually or using hoist. Moves controls to lower ram that presses part onto shaft or into housing. Verifies alignment of parts, using rule and gauges. May disassemble parts, using arbor press. May repair defective parts after disassembly, using hand, power or machine tools. May be designated according to part assembled; for example, Wheel-Press Operator(rail. rolling stock)

8529-206 BEARING ASSEMBLER(metal fab., n.e.c.) DPT:684

GED: 3 SVP: 3 EC: 1 PA: L 4 7

Assembles miniature, standard and large ball or roller bearings by performing any combination of the following duties: Measures and selects matched inner and outer rings, and places them on pedestal jig. Picks up miniature bearings, using vacuum needle, or actuates lever that releases appropriate size and number of ball or roller bearings from feed hopper. Inserts balls or rollers between inner and outer rings, using non-magnetic needle. Inserts retaining guard or cage into bearing unit assembly manually. Places assembled bearings on conveyor that carries them through cleaning and oil baths. Inspects bearings for obvious physical defects by running them over a surface plate and revolving by hand. Places acceptable bearings on sound testing machine and records aural and visual readings. Loads acceptable bearings in baskets for final degreasing and drying. Stencils manufacturers information on outer ring, using electric etching process. Places stencilled bearings on machine that fills bearing race with controlled amount of grease. Wraps bearings individually or in groups, using special paper. May perform repair or salvage operations on rejected bearings that do not meet test specifications.

8529-210 SPOKE-WHEEL ASSEMBLER(motor vehicle) DPT:684

GED: 2 SVP: 4 EC: 1 PA: M 4

Laces and aligns spoke-wheels, such as motorcycle and bicycle wheels, according to specification, by either of the following methods: 1. Places spoked hub on bed of machine and positions rim over hub. Presses button to start machine that fits and tightens spoke nipples, and aligns and centers rim. 2. Hooks wire spokes onto perforated hubs and screws nipples of spokes onto rim to lace wheel, using special wrench. Measures diameter of wheel, using fixed gauge. Mounts tires on wheels and clamps wheel in fixture. Positions dial indicator against tire and rim, turns wheel, and observes needle deflection on indicator. Turns nipples with wrench to adjust tension of spokes at indicated points to align wheel.

8529-214 GUN SUBASSEMBLER(metal fab., n.e.c.) DPT:684

small-arms subassembler.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles triggers, bolts, ejectors, magazines and other subassemblies for small arms; such as, revolvers, rifles, shotguns and air or gas-powered guns:

Drills, reams and countersinks parts, using power tools. Screws, bolts or rivets parts together to form subassembly, using hand and power tools. Files, scrapes or peens parts to improve fit and appearance. Verifies accuracy of assembly, using gauges. May assemble gun stock, barrel, trigger, and other components to form complete weapon, using hand and power tools.

8529-218 AIR-CONDITIONING-COIL ASSEMBLER (mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: L 4 PA: M 4

Assembles prepunched aluminum fin plates and copper tubing to form cooling coils for air-conditioning units: Clamps fin plates into position on bench. Inserts copper tubing through holes in fin plates. Positions hydraulic expansion chucks on each end of tubing and operates control to apply hydraulic pressure to expand tubes into fins. Expands tube ends, using pneumatic hammer or hand-flaring tool. Immerses coil in water tank, using hoist, connects air hose to one end and plugs other end, to test for air leaks. Repairs leaky coils, using hand tools and brazing equipment.

8529-222 PRODUCT ASSEMBLER, METAL(any ind.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4

Assembles metal products; such as, vacuum cleaners, valves, hydraulic cylinders or domestic appliances, partially or completely, working at bench or on shop floor: Positions component parts according to knowledge of unit being assembled or in accordance with drawings and specifications. Aligns holes and assembles parts with bolts, screws, speed clips, or other fasteners, using hand tools and portable power tools. Files and scrapes parts to produce close fit. May operate drill presses, punch presses or riveting machines to assist in assembly operation.

8529-226 VENETIAN-BLIND ASSEMBLER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4

Assembles venetian blinds: Reads work order to determine components required to assemble venetian blind. Tends power press to form and cut metal rails and slats to required dimensions. Installs metal turning and raising assemblies in place on top rail, using hand tools, and attaches tapes and cords. Places required number of slats through tape loops and threads cord through holes in slats. Fastens end of tape to bottom rail, using stapler, and trims excess tape from assembled blind. Examines completed assembly and installs blind on hangers to test functional performance. Wraps and packs blinds for shipment.

8529-228 CARBIDE-PRESS TENDER(metal fab., n.e.c.) DPT:685
compressor, tungsten-carbide blanks.
GED: 2 SVP: 3 EC: I 5 6 PA: M 4 7

Compresses granulated tungsten-carbide powder into carbide blanks of specified size and shape, by either of the following methods: 1. Installs dies in machine and adjusts spring tension and ram pressure of mechanical press, according to specifications, using hand tools. Scoops or dumps powder into hopper, and presses button to start machine that compresses powder into blanks. Examines and feels compressed blanks to detect surface chips, pits and other imperfections. Measures and weighs samples, using micrometer and scale, or routes samples to laboratory for analysis and inspection. Readjusts machine tension and pressure as required to produce carbide blanks according to specifications. Places blanks on trays preparatory to sintering. Removes and cleans dies and compression chambers, using hand tools, air hose and cloth. 2. Weighs out specified amount of powder, using scoop and scale. Dumps powder from scale pan into cavity of collapsible mould, and levels powder with hand tool. Places plunger block over powder in mould, places mould in hydraulic press, and presses button to close side rams, locking mould in place. Presses dual buttons to lower ram, compressing powder in mould into desired shape. Releases buttons, removes mould from press and disassembles mould. Removes carbide blank from mould, examines it for defects and places on tray preparatory to sintering. Sends samples to

laboratory for analysis and inspection. Cleans mould sections, using scraper and cloth, and reassembles mould.

8529-230 COUPLING-MACHINE TENDER(iron & steel) DPT:685
GED: 2 SVP: 2 EC: I 5 6 7 PA: M 4

Tends machine that screws metal couplings onto lengths of pipe: Reads work order and sets machine torque dial to specifications. Lifts couplings onto machine feed ramp. Pushes button to start automatic machine that tightens couplings onto pipe to specified torque. Presses release button that lifts pipe onto transfer table and into drifter machine that cleans inside of pipe. Observes automatic action of indexing machine that paints coloured identification bands on pipes. Performs servicing and maintenance operations on machines, such as refilling grease and paint reservoirs from cans, and replacing or adjusting pipe holding mechanisms, using wrenches. Manually controls machine operations in event of breakdown of automatic control system.

8529-234 KNITTING-NEEDLE-MACHINE FEEDER(misc. prod. fab., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I 5 6 PA: L 4 7

Feeds variety of machines that bend, chamfer, clip, press, rivet or straighten industrial knitting needles prior to final processing: Prepares needles for processing by aligning ends in feed trap or on machine beds, or by placing in special holding fixtures and securing lids, using wrench. Feeds needles into machines that incorporate feeding devices such as conveyors, jaws or slots according to standard procedures. Observes functioning of machines and removes jammed needles, using metal tool. Empties filled catch pans or removes needles from special holding fixtures, using wrench. Reports malfunctioning of machines for corrective action. Records daily production data on work card. May feed vibrating board with processed needles to align ends in preparation for packaging. May inspect and adjust latches on knitting needles, using metal tool, and be designated accordingly, Knitting-Needle-Latch Adjuster

8529-238 ASSEMBLER, FILTERS(misc. prod. fab., n.e.c.; motor vehicle) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4

Assembles filters used in air, fuel or oil systems on aircraft, automotive or industrial engines by performing any combination of the following duties: Places roll of paper on holder and threads paper through convolution machine. Presses control button to start machine that folds and cures filter paper. Observes machine operation for jamming or overcuring. Assembles filter components composed of metal, rubber, plastic or paper materials and places them into applicable outer casing or shroud. Installs plastic-coated metal, plastic or cardboard disks on ends of filter units. Places units in machine that automatically fastens sealers on ends. May operate screening machine used to print information on filter surface. May be designated according to type of filter assembled; for example, Air-Filter Assembler Fuel-Filter Assembler Oil-Filter Assembler

8529-242 BABY-CARRIAGE ASSEMBLER(misc. prod. fab., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4

Assembles prefabricated metal and plastic parts to make baby carriages and strollers: Assembles and fits prefabricated metal and plastic parts together with nuts and bolts, screws or rivets, using a variety of hand and power tools. Glues side padding to assembled frame, using brush. Installs specified hardware, hood, cushions and wheels to complete carriage or stroller assembly. May place package of wheels in assembled unit for installation by customer.

8529-246 STRETCHER, BEDSPRING(furn.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: M 4

Stretches wire mesh over metal frames to assemble springs for cots, folding beds or other furniture:
 Clamps frame into jig and places metal springs in specified positions on frame bars. Spreads wire mesh over frame and hooks springs to loops in mesh, using hand tool. Stretches wire mesh over frame by attaching and clinching metal clips, using hammer and pliers.
 May attach edge-wire frames to coil spring assemblies of mattresses or box springs, using wire clips and pliers, and be designated accordingly,
 Wire-Border Installer

**8529-299 MISCELLANEOUS FABRICATING AND
 ASSEMBLING OCCUPATIONS, METAL
 PRODUCTS**

This group includes metal products fabricating and assembling workers, not elsewhere classified; for example, those who tend machines that rivet ear lugs onto sides of pails, garbage cans or paint tins. A typical example of an occupational title covered by this residual group definition is:

Ear-Lug Riveter(misc. prod. fab., n.e.c.)

853-FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT

This minor group includes occupations concerned with fabricating, assembling, installing and repairing such electrical and electronic equipment as motors, generators and batteries, domestic appliances, communications equipment, data-processing equipment, and radio and television receivers; and such electrical and electronic components and parts as coils, transformers, light bulbs, cathode-ray and electron tubes, capacitors, resistors and printed circuitry. Occupations concerned with repairing office equipment, such as bookkeeping machines and typewriters, are classified in Unit Group 8585, BUSINESS AND COMMERCIAL MACHINE MECHANICS AND REPAIRMEN. Occupations concerned with installing and repairing precision instruments, such as scientific, engineering, optical and medical instruments and apparatus, are classified in Unit Group 8588, PRECISION INSTRUMENT MECHANICS AND REPAIRMEN. Occupations concerned with fabricating and assembling other equipment primarily of a mechanical nature, but which may be electrically or electronically activated, are classified in their appropriate unit groups within Major Group 85, PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS. FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT are classified in the following unit groups:

- 8530** Foremen: Fabricating, Assembling,
 Installing and Repairing Occupations,
 Electrical, Electronic and Related
 Equipment
- 8531** Electrical Equipment Fabricating and
 Assembling Occupations
- 8533** Electrical and Related Equipment Installing
 and Repairing Occupations, n.e.c.
- 8534** Electronic Equipment Fabricating and
 Assembling Occupations
- 8535** Electronic and Related Equipment
 Installing and Repairing Occupations,
 n.e.c.
- 8536** Inspecting and Testing Occupations:
 Fabricating, Assembling, Installing and
 Repairing, Electrical, Electronic and
 Related Equipment
- 8537** Radio and Television Service Repairmen
- 8538** Occupations in Labouring and Other
 Elemental Work: Fabricating,
 Assembling, Installing and Repairing,
 Electrical, Electronic and Related
 Equipment

8539 Fabricating, Assembling, Installing and Repairing Occupations: Electrical, Electronic and Related Equipment, n.e.c.

8530-FOREMEN: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS, ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT

This unit group includes occupations as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in fabricating, assembling, installing, repairing, testing and inspecting electrical, electronic and related equipment.

8530-110 FOREMAN, ELECTRICAL AND ELECTRONIC INSPECTION(electric. equip.; electronic equip.)

DPT:138

Supervises and co-ordinates activities of workers engaged in inspecting, testing, grading and sampling work concerned with quality control activities in assembly, fabrication, installation and repair of electrical, electronic and related equipment (Unit Group 8536):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Chief Inspector, Television Production(electronic equip.)

Foreman, Communications-Equipment Testing(electronic equip.)

Foreman, Electric-Motor Testing(electric. equip.)

8530-118 FOREMAN, ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING

OCCUPATIONS(electric. equip.)

DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating and assembling a wide variety of electrical equipment, such as motors and generators, household-electrical appliances, industrial-electrical-control equipment and wet or dry cells, storage batteries and battery packs (Unit Group 8531):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Appliance Assembly

Foreman, Dry-Cell Assembly

Foreman, Motor-and-Generator Assembly

8530-122 FOREMAN, ELECTRICAL EQUIPMENT INSTALLATION AND REPAIR(electric. equip.)

DPT:138

Supervises and co-ordinates activities of workers engaged in installing and repairing various kinds of electrical machinery and equipment, such as domestic appliances and electrical components of transport vehicles, aircraft and ships (Unit Group 8533):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Electric-Motor-Repair Foreman

Foreman, Appliance-Repair Shop

Foreman, Transformer-Repair Shop

8530-126 FOREMAN, ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING

OCCUPATIONS(electronic equip.)

DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating and assembling a wide variety of electronic equipment, such as domestic radio and television receivers, high fidelity audio equipment, commercial and aircraft communications and radar equipment, and components such as electron tubes, capacitors and printed circuit boards (Unit Group 8534):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Crystal-Processing Foreman

Foreman, Communications-Equipment Assembly

Printed-Circuit-Board Foreman

Semiconductor-Assembly Foreman

8530-130 FOREMAN, ELECTRONIC EQUIPMENT INSTALLATION AND REPAIR(air trans.;

electronic equip.)

DPT:138

Supervises and co-ordinates activities of workers engaged in installing and repairing a wide variety of commercial electronic and related equipment, such as communications receivers and transmitters, radar equipment and computing equipment (Unit Group 8535):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Flight-Simulator Repair, Chief(air trans.)

Foreman, Aircraft-Radar Repair(electronic equip.)

Foreman, Audio-Visual Equipment(electronic equip.)

8530-134 FOREMAN, RADIO AND TELEVISION REPAIR(electronic equip.)

DPT:138

Supervises and co-ordinates activities of workers engaged in repairing radio and television receivers and other domestic electronic equipment, such as tape recorders and high-fidelity audio equipment (Unit Group 8537):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Radio Repair

Foreman, Television Repair

8530-199 OTHER FOREMEN, ELECTRICAL AND ELECTRONIC OCCUPATIONS

This group includes electrical and electronic foreman, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in tending coil-winding machines that wind coils for use in small electrical and electronic components. A typical example of an occupational title covered by this residual group definition is:

Foreman, Coil Winding(electric. equip.; electronic equip.)

8531-ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS

This unit group includes occupations concerned with fabricating and assembling commercial air-conditioning and refrigeration equipment, and other electrical products and appliances; wet and dry batteries; fixtures, bulbs, electric signs and other lighting equipment; motors, generators and related equipment; and miscellaneous products, such as automated process-control equipment, heavy-duty capacitors and power-distribution transformers. Activities include: assembly-line work, such as locating, mounting and securing component parts of appliances and motors, using hand and power tools; positioning and securing cable assemblies and attaching cables and other electrical leads to relays, switches and other components; and tending or operating production machines to wind coils for motors and generators, fill batteries with

electrolyte, and exhaust and seal electric light bulbs. ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS are classified in Unit Group 8534.

Commercial and Industrial Air-Conditioning and Refrigeration Equipment, Fabricating and Assembling Occupations
8531-110 through 8531-122

8531-110 FITTER-ASSEMBLER, ENVIRONMENTAL CHAMBER(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: 1 PA: M 3 4 7

Fits and assembles refrigeration system in refrigeration unit for use as environmental chamber:

Consults drawings to determine location, size, capacity and type of components required, such as compressor, condenser, expansion tank, valves and tubing. Fits and assembles components of refrigeration system in refrigeration unit, using hand and power tools. Installs expansion and control valves, using welding torch and wrenches. Adjusts valves according to specifications. Attaches thermocouples at various points of gas-charged refrigeration system. Test-operates equipment to evaluate functioning and cooling capacity. Fabricates and assembles structural members used to support additional test apparatus as required.

8531-114 ASSEMBLER, COMMERCIAL REFRIGERATOR(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 5 EC: 1 PA: M 3 4 7

Assembles commercial refrigerators, display case and walk-in type coolers, performing any combination of following duties:

Assembles cooling-blower assembly, by installing air impeller in housing, affixing directional air-flow grills, and by installing control switches, wiring and cushioning pads. Mounts components, such as blower assembly, electric motor, compressor, rubber grommets and insulation, using hand tools and power tools. Installs glass windows in display cases, by cutting and fitting gasket material around window pane and securing glass to cabinet with metal frame, using hand tools and power tools. Fits hardware, such as hinges, latches and shelving, using hand tools, power tools and riveting machine. Paints case with rust preventative.

May test electrical wiring for continuity or leakage to ground, using electrical-test equipment.

8531-118 GAS CHARGER, REFRIGERATION EQUIPMENT(mech. equip., n.e.c.) DPT:485
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Tends charging device to fill refrigeration unit compressors with gas refrigerant:

Tests compressor-coil assembly for leaks by admitting nitrogen or dry air under pressure, and immerses assembly in water-filled tank. Repairs leaks, using welding equipment. Purges traces of nitrogen from system, using compressed dry air. Connects assembly to vacuum pump for specified time. Sets controls on charging console to control volume and type of gas for type of unit to be charged, following specifications. Attaches filler hose to unit and actuates control to fill compressor assembly with refrigerant. Determines gas pressure in system, using pressure-measuring device. Shuts off flow of gas when specified pressure is attained and disconnects supply line. Fills oil reservoir on compressor.

8531-122 ASSEMBLER, COOLING UNIT(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Assembles cooling units and related items used in air-conditioning and refrigeration equipment, performing any combination of following duties:

Mounts blowers, fans, compressors, motors and refrigerant tubing, using hand tools, electric drill and riveter and following production drawings. Installs wiring to electrical parts, such as motor relays, switches and thermostat, using electrical connectors, terminals and crimping tool. Cuts, bends and brazes tubing to outlets and inlets of cooling unit components, using brazing equipment and hand tools. Charges unit with refrigerant, using charging equipment. Performs running test to check for noise and vibration and corrects when

necessary. Tests unit for refrigerant leaks, using gas-leak tester. Bolts down compressors to prevent damage in shipment. Pastes labels, tags and instructions on unit.

May assemble units for air-conditioning equipment and be designated accordingly,
Air-Conditioning-Unit Assembler

Electrical Appliance Fabricating and Assembling Occupations
8531-142 through 8531-148

8531-142 ASSEMBLER, ELECTRICAL APPLIANCES(electric. equip.) DPT:684
GED: 3 SVP: 4 EC: 1 5 PA: M 3 4 7

Assembles household-electrical appliances and equipment, such as stoves, washing machines, and automatic furnaces, performing any combination of the following duties:

Secures components, such as motors, pumps, control panels, blowers and heating units, in specified location, using hand and power tools. Makes electrical connections to control panels, motors, heating units or blowers as specified, according to colour, size or length of wire, by connecting mating plugs and sockets, securing prepared leads to screw terminals, placing insulated sleeving over exposed wire and interconnecting leads by soldering or by use of solderless connectors. Fastens parts such as trim, support brackets and panels by positioning and aligning parts and inserting and tightening screws, using hand and power tools. Packs or positions insulating material between panels.

May test wiring for short circuits or leakage to ground, using electrical-test equipment. May be designated according to appliance assembled; for example,

Clothes-Drier Assembler
Electric-Range Assembler
Furnace Assembler
Washing-Machine Assembler

8531-144 ELECTRICAL-APPLIANCE SET-UP MAN(electric. equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: H 3 4 7

Prepares major-electrical appliances, such as stoves, washing machines and refrigerators for operation:

Uncrates appliances, using pry bar, wire cutters and nail puller. Removes separately packaged items, such as control panels and hoses, and checks them against packing list. Positions and secures parts and attaches interconnecting wiring, following manufacturers instructions. Places items, such as shelves, ice trays and wire baskets, in appliance. Plugs in appliance or connects wires to power source, using hand tools. Actuates switches and controls and observes appliance to ensure operation as specified by manufacturer's instructions. Washes and polishes appliances and examines exterior surfaces for scratches and dents.

May prepare particular appliance and be designated accordingly; for example,

Dishwasher Set-Up Man
Electric-Range Set-Up Man

8531-148 ASSEMBLER, PORTABLE-ELECTRICAL APPLIANCE(electric. equip.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles portable-electrical appliances, such as food mixers, coffee makers and steam irons, performing any combination of following duties:

Inserts and tightens screws, bolts or rivets through predrilled holes, using hand and power tools, while article is held and positioned in jig, to secure field windings, fan blades, pulleys, thermostats, switches and timers to appliance housing. Installs gears, drive mechanisms, blades or cutters in motor driven appliances. Attaches lug ends of wires to terminals with screws or solders wire ends to terminals, using soldering equipment, to connect motor or line cord. Winds coiled or straight heating-element wire around mica or porcelain base, or strings wire through porcelain insulators to assemble heating units for toasters, hot plates and electric irons. Folds and seals adhesive-insulating fabric over thermostats in heating pads and electric blankets.

May be designated according to appliance assembled; for example,
Electric-Fan Assembler

Food-Mixer Assembler

Steam-Iron Assembler

**Wet and Dry-Cell Battery Fabricating and Assembling
Occupations
8531-168 through 8531-224**

8531-168 PLATE FORMER, LEAD-ACID STORAGE

BATTERY(electric. equip.) DPT:382
GED: 3 SVP: 5 EC: 1 4 6 7 PA: L 4 7

Controls rectifiers or direct-current generating and auxiliary equipment to electrically condition lead-acid storage battery plates:

Interconnects plates by burning (melting) lead strips to assemble elements, using gas torch. Positions elements in forming-tank slots to prevent buckling, and connects them to voltage supply terminals to electrically condition (form) plates. Admits electrolyte (diluted sulphuric acid) to forming tanks, using hose. Checks output voltage and adjusts rheostat to set forming current at specified level. Monitors forming process to detect deviations, such as increase in current or in electrolyte temperature, and makes corrective adjustments. Switches off voltage supply after specified time and disconnects elements. Removes formed elements from electrolyte.

May mix acid and water to specification for use in forming tanks. May perform tests on formed plates such as on-load voltage test or discharge test.

8531-172 BATTERY-PLATE STACKER, MACHINE(electric. equip.) DPT:382
GED: 3 SVP: 4 EC: 1 6 7 PA: L 4 7

Operates machine which sequentially places positive plates, separators and negative plates of lead-acid storage batteries into groups to form plate complement for one cell:

Loads positive and negative plates into machine magazine. Positions separators in magazine with ribbed side towards positive plate, to facilitate passage of sediment in operational battery. Moves lever to set electrical counter for number of plates specified for one battery cell. Turns screws to adjust opening in feeding mechanism according to plate size, using hand tools. Starts machine to stack positive and negative plates and separators alternately, to form group. Clears machine stoppages and adjusts machine to correct malfunctions, using hand tools. Places grouped plates on conveyor to transport them to another station for further processing. Removes lead-oxide dust from machine, using vacuum cleaner.

8531-176 PASTING-MACHINE OPERATOR(electric. equip.) DPT:382
lead-acid battery plate maker.
GED: 3 SVP: 4 EC: 1 6 7 PA: M 4 7

Operates pasting machine and dryer to apply specified amount of lead-oxide paste to grids to make positive plates for lead-acid storage batteries:

Stacks grids or multiple-grid panels on bench or in automatic feeding device. Adjusts machine guides to grid size, using hand tools. Installs correct pasting plate and roller, according to thickness specified for plate, using hand tools. Hoists carts of paste into position near machine and shovels or hoes paste into hopper. Starts machine that automatically feeds grids between shoes of scraper to produce plate. Sets dryer temperature as specified. Examines plates to ensure adequate processing. Cleans machine and equipment.

May apply paste by hand for special batteries or for short runs and be designated accordingly.
Paster Hand, Battery Plates

8531-180 ASSEMBLER, STORAGE BATTERY(electric. equip.) DPT:484
GED: 3 SVP: 4 EC: 1 6 PA: L 4 7

Assembles lead-acid storage batteries, performing any combination of following duties:

Positions group of plates for cell in jig and inserts insulating separators between positive and negative plates. Inserts shaped insulating material around cell or inserts wooden shims to obtain tight fit. Places state-of-charge indicator in each cell and attaches glass mat to rear surface, using adhesive. Applies liquid level lines to case, using marking device. Installs cell covers and inserts bushings over post

openings to provide lead-proof seal. Fits and fuses intercell connectors on posts, using torch. Fits filler plugs over acid-filling openings. Pours molten compound over cells to fill cracks and seal battery, using thermostatically-controlled kettle and sealing or automatic extrusion device. Stamps information, such as polarity symbols and dates, on posts and connectors, using marking dies and mallet. Tests sealed units for air leaks, by submerging in water and using air-pressure device. Tests cells electrically by determining internal resistance, using ohmmeter, or applies specified voltage and reads current flow with testing device.

May tend automated-process equipment to perform functions, such as positioning interconnecting lead straps, lead burning and sealing. May perform similar duties related to assembly of nickel-iron and nickel-cadmium storage batteries.

May perform a particular function and be designated accordingly; for example,
Element Setter
Separator Insertor

**8531-184 ASSEMBLER, INDUSTRIAL-STORAGE-
BATTERY-PLATES**(electric. equip.) DPT:684
GED: 2 SVP: 4 EC: 1 6 7 PA: M 4 7

Prepares and assembles component parts to make positive plates for heavy-duty industrial lead-acid storage batteries, performing any combination of following duties:

Fills hopper of tube-filling and capping machine with lead-oxide powder. Positions nylon cylindrical tubes and plastic bottom sections, in machine-feed mechanisms. Actuates control to release measured amounts of lead oxide into cylindrical tube and pack oxide into tube. Positions lead spines (comb-shaped lead castings) in trimming and forming machines that trim off excess metal, straighten and flatten spines, and cut them to specified length. Examines spines and removes excess metal, using scraper and hacksaw blade. Aligns lead-oxide filled nylon tubes in jig on workbench and pushes lead spines into tubes, by hand.

May perform a specific duty and be designated accordingly; for example,
Spine Fitter
Storage-Battery-Tube Filler
Trimmer and Slammer

8531-188 FLAT-DRY-CELL-MACHINE TENDER(electric. equip.) DPT:685
wafer-machine tender.
GED: 3 SVP: 3 EC: 1 PA: L 4 5 7

Tends machines to fabricate wafer-type (flat) dry cells:

Loads feeding mechanisms with materials, such as pliofilm, paper, zinc and carbon plates and silver wax. Starts machine which cuts piece of pliofilm with adhesive surface, presses zinc plate on pliofilm, cuts and places paper cover on zinc plate, deposits black mix (electrolyte) on pliofilm and positions carbon plate over electrolyte. Adjusts machines and equipment for cell size changes or to correct malfunctions, such as faulty timing, sealing and trimming, using hand tools. Monitors workers who perform related duties, such as application of silver wax to terminals, and tamping and sealing cell.

**8531-192 COREMAKING-MACHINE TENDER, DRY
BATTERY**(electric. equip.) DPT:685
GED: 2 SVP: 3 EC: 1 5 7 PA: L 4

Tends machine which moulds core and inserts carbon rod into core to form part of dry-cell battery:

Installs extruder bushing and mould on machine, using hand tools. Places carbon rods in trough of feeding mechanism. Fills machine hopper with electrolyte paste, using shovel. Starts machine that rams paste into mould, inserts carbon rod into paste, tamps paste around carbon rod and ejects finished core onto conveyor belt. Inspects core for defects, such as off-centered rods. Adjusts rod-centering device, length of stroke and force of impact, using hand tools.

May extrude and cut cores for dry-cell batteries, using manually operated extrusion press.

8531-196 STORAGE-BATTERY CHARGER(electric. equip.) DPT:687

GED: 2 SVP: 3 EC: I 6 PA: M 4 7

Charges storage batteries at manufacturing or user establishment, performing any combination of the following duties:
Lifts and places batteries on charging table. Places filler-vent caps loosely over cell openings, to allow unrestricted escape of gas from cells. Connects batteries to charger in series, using connecting leads, adds specified amount of water to cells and switches on battery charger. Observes ammeter of charger and adjusts charging-rate controls to specified current. Tests specific gravity of battery cells, using hydrometer. Switches off charger after batteries are fully charged and removes connecting leads. Secures filler-vent caps of charged batteries and removes batteries from charging table. May clean used battery terminals and case, using soda solution, wire brush and cleaning materials.

8531-200 BATTERY-PLATE WASHER AND DRIER(electric. equip.) DPT:685

GED: 2 SVP: 3 EC: I 6 PA: L 4

Tends equipment to wash and dry formed-battery plates used in dry-charged batteries:
Turns valves and actuates switches to fill washing tanks with water, ignite burners and start blower in drying compartment. Observes gauges and adjusts controls to maintain specified temperature and pressure in drier. Removes baskets of plates from forming tanks and loads them into washing tank, to wash off electrolyte, using hoist. Loads baskets of washed elements into drier, using hoist or lift truck. Removes plates from drier and tests plates for moisture content, using ohmmeter. Places dried plates in compartments of battery cases in specified manner.

8531-204 SEALER, DRY CELL(electric. equip.) DPT:685

GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Tends automatic machine to seal dry cells:
Installs sprocket (rotary type conveyor) or alters conventional conveyor for size of cells to be run, using hand tools. Adjusts compound dispenser and flamer for size of cells, using hand tools. Monitors process to ensure adequate sealing and to detect malfunction. Adds and melts sealant on cell top when sealing is inadequate, using torch. May remove cells from dry-cell assembling machine preparatory to sealing.

8531-208 CAPPING-MACHINE TENDER, DRY CELL(electric. equip.) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that inserts paper washers and affixes top caps over cores and carbon elements of dry cells:
Inserts washers and caps into feed mechanisms. Starts machine and watches mirror to observe cells passing on conveyor to ensure washers are correctly placed. Inspects capped cells for defects such as off-center carbon rods. Adjusts machine for changes in cell size or to correct malfunction, using hand tools.
May tend machine that cuts paper washers from tape, inserts washer and affixes cap to cell.

8531-212 DRY-CELL TUBER, MACHINE(electric. equip.) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that inserts and seals dry cells in pliofilm-lined paper tubes:
Starts and feeds cells to tubing machine that inserts metal bottom and dry cell into paper tube and crimps tube over bottom. Inspects units for faulty crimping or sealing. Observes machine for malfunction and makes adjustments.
May tend machine that inserts tubed cell into metal sleeve and positions and crimps metal cap on sleeve. May be designated according to type of machine tended; for example,
Sleeve-Machine Tender
Tubing-Machine Tender
Wrapping-Machine Tender

8531-216 ASSEMBLER, DRY CELL AND BATTERY(electric. equip.) DPT:687

GED: 2 SVP: 2 EC: I PA: L 4 7

Assembles cylindrical dry cells and dry batteries, performing any combination of following duties:
Removes cylindrical zinc cans from cartons and places them in trays. Drops washer into bottom of cans. Pulls lever to drain measured amount of liquid paste into can. Places paper liner over open end of can. Drops battery core into can forcing liner with it. Monitors conveyor-fed electrical mechanism that contacts and tests finished cells. Removes defective cells from conveyor. Inserts cells in partitioned containers to make battery. Bends wires on cells preparatory to soldering. Solders wires to rows of cells to effect series connection of cells. Pours hot asphalt into outer battery container, using dispenser. Places battery in container and presses it into asphalt. Places finished batteries in cartons.

8531-220 ASSEMBLER, FLAT-DRY-CELL-BATTERY(electric. equip.) DPT:687

GED: 2 SVP: 2 EC: I PA: S 4 7

Assembles wafer-type (flat) dry-cell batteries, performing any combination of following duties:
Forms container for battery, using pliofilm sheet and sealing iron. Selects specified number of cells which are provided in strip configuration and inspects and folds them to form stack. Compresses stack to form battery, using hand press, and secures stack, using plastic tape. Places stack in pliofilm container and withdraws air to shape container, using vacuum device. Tests battery voltage. Makes connection to battery electrodes and terminals, using connecting leads and soldering iron. Inserts bottom, pad and battery in container. Positions terminals and crimps top and bottom of container, using crimping press.

8531-224 LEAD-ACID-BATTERY FILLER(electric. equip.) DPT:687

acid filler.
GED: 2 SVP: 2 EC: I 4 6 7 PA: L 4 7

Fills lead-acid battery cells with sulphuric acid solution of specified concentration, preparatory to plate-forming and charging processes:
Positions spouts attached to hoses, over battery-cell openings or fits multiple-filler head of vacuum-filler machine over battery vents. Adjusts valves of gravity feed or vacuum filler to start acid flow and fill cells.
May add acid to batteries that are not filled to specified level.

Light-Fixtures and Light Bulbs Fabricating and Assembling Occupations

8531-244 through 8531-272

8531-244 SET-UP MAN, LAMP-MAKING MACHINES(electric. equip.) DPT:280

GED: 4 SVP: 7 EC: I 6 PA: M 3 4 7

Sets up and adjusts production machines used in manufacture of electric lamps:
Installs and adjusts machine parts, such as cutters, revolving heads, bulb loaders, burners, and etching stamps, using hand tools and magnifying glass. Lights burners and adjusts gas, air, oxygen and hydrogen valves to attain specified flame. Starts machines, and places bulbs, tubing and other parts into respective machine hoppers that feed them into heads of rotating turret. Operates machines through trial run to ensure accuracy of machine set up, and makes necessary adjustments to ensure specified machine operation. Observes machine operation and examines items produced for quality of cutting, sealing and punching. Examines etching on lamp for cleanliness and definition and readjusts machine as required. Removes expended gas cylinders from machines, using hand tools, and replaces with filled cylinders. Cleans machines, using solvents, lubricates machines, using specified lubricants and replaces defective machine parts, using hand tools.

8531-248 ASSEMBLER, ELECTRIC SIGN(electric. equip.)
DPT:381
GED: 3 SVP: 5 EC: 1 6 PA: L 3 4 7

Assembles electric signs, performing any combination of following duties:

Determines, on basis of experience or from drawing, location of such component parts as lamp sockets, ballast transformers and switches in fluorescent signs, and insulators, step-up transformers and neon-tubing supports used in neon signs. Punches or drills cable-entry holes, using knockout punch or electric drill. Drills mounting holes and mounts components such as ballast transformers, lamp sockets and switches, using hand tools. Completes interconnecting wiring to lamp sockets and ballast transformers, using wiring diagram, connectors, crimping tool and soldering equipment. Installs fluorescent lamps in sockets. Attaches tubing supports, selects and installs specified tubing, and inserts tubing electrode into connecting terminal, using hand tools. Tests between high-voltage terminals and ground, to ensure adequate insulation, using insulation tester. Connects sign to power source to check operation. Fits precut plexiglass or plastic pane to metal frame.

May cut and weld together metal frames for sign housings.

8531-252 ASSEMBLER, QUARTZ LAMPS(electric. equip.)
DPT:684
GED: 3 SVP: 4 EC: 1 3 6 PA: L 4 7

Assembles quartz-arc tubes and quartz lamps used in special lighting applications such as motion-picture projectors and studio lighting, performing any combination of the following duties:

Positions quartz-glass blanks in lathe, starts lathe, adjusts gas torch to heat glass, and positions tool against revolving glass, to shape it to specified contour. Positions electrodes for arc tubes and filaments for quartz lamps in sealing-machine fixture and places glass enclosures over electrodes or filament assemblies. Starts machine to process units through heating and sealing stages to seal internal components into ends of glass enclosures. Fuses air-exhaust tube to glass enclosures, using ring burner and air jet. Heats and bends glass tubing to form mercury traps, and fuses them to exhaust tube, using hand torch. Places mercury in end of trap on arc-tube- glass enclosure. Tends machines that process assembly through specified stages to exhaust air, vaporize mercury, inject inert gas into arc tubes, and seal tubes. Inspects tubes and lamps to detect bubbles, cracks and other defects, using microscope. Passes energized high-frequency probe over lamps and watches for bluish glow to indicate acceptable tube subassembly. Cements porcelain base to ends of lamps and tubes.

8531-256 ASSEMBLER, LIGHT FIXTURES(electric. equip.)
DPT:684
GED: 3 SVP: 3 EC: 1 6 PA: L 4

Assembles component parts to make sub-assemblies or complete lighting fixtures, such as chandeliers, lamps, shades or reflectors:

Fastens parts together with bolts or screws, using hand tools. Threads and pulls electric cord through lighting fixture body or frame. Ties safety knot in cord inside fixture to prevent cord being detached. Strips insulation from ends of wires and attaches ends to terminal of socket, using knife, pliers, stripping tool, and screwdriver. Tests completed units by inserting incandescent bulb or fluorescent tube into fixture and plugging terminal into electrical outlet.

May work from drawings or sketches. May bore holes in fixture, using drill press. May be designated accordingly to type of fixture assembled; for example,

Assembler, Floor Lamp
Assembler, Fluorescent-Light Fixtures

8531-260 ASSEMBLER, BALLAST TRANSFORMER(electric. equip.)
DPT:684
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Assembles fluorescent light ballast transformers, performing any combination of the following duties:

Feeds machine to shape fuse-elements from length of fuse wire. Positions fuse element in cylindrical-plastic shell and fills shell with molten wax to form fuse. Cuts lengths of coil from prewound square coil stock, using bandsaw, and positions coil leads, using tweezers. Inserts steel laminations in coil ends to form transformer core. Compresses and secures laminations in position, using clamps and crimping fixture. Positions terminal board, coil assembly, fuse and

capacitor in transformer housing. Interconnects parts and attaches transformer leads, using hand tools, soldering iron and sketch. Performs electrical tests, using electrical-test equipment, and makes minor repairs to faulty items. Moisture-proofs transformer with molten asphalt compound, using dispenser. Places cover on transformer case, affixes identification label and places in carton.

8531-264 ASSEMBLER, LIGHT BULB(electric. equip.)
DPT:684
GED: 2 SVP: 3 EC: 1 7 PA: L 4 7

Assembles incandescent lamps, sealed-beam headlamps, fluorescent tubes and photoflash bulbs, performing any combination of following duties:

Feeds material, such as lead and fuse wires, flares and getter fluid, into machine that shapes and combines them to make mounts. Positions filament-coil ends on hooked support lead, and secures them, using die press or spot welder. Examines completed mounts for defects and segregates and counts defective items. Feeds glass bulbs and mounts into machines that insert and seal mount in bulb, exhaust air and add mercury vapour or inert gas. Inserts leads protruding through bottom of bulbs into cement-filled base contact points. Starts and observes operation of machines which press bulb into base, bake cement and cut off excess wire and solder from side and bottom contacts. Dips rack of Christmas-tree lamps into lacquer, to colour them. Tends machines that fuse contact wires in one end of glass bulbs, shred zirconium foil and blow it into bulb, add primer powder and exhaust air and seal ends, to produce photoflash bulbs. Places small photoflash bulbs in plastic base plate, secures connecting leads, using crimping machine, places plastic cube over bulb assembly and seals to plate, using ultrasonic welder, to produce photoflash cubes. Cleans reflectors for sealed beam headlights, using alcohol and cloth. Feeds components to machines which assemble components, to make sealed-beam headlights. Tends machines which coat inside of fluorescent lamp tubes, heat tubes, exhaust air, add inert gas and attach and secure connectors.

May perform a particular part of an assembly process and be designated accordingly; for example,
Filament Mounter, Hand
Sealing-Machine Tender

8531-268 ASSEMBLER, MINIATURE BULB(electric. equip.)
DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles miniature lamps by hand, performing any combination of following duties:

Positions hooked ends of stem leads and support wires on press bed and slips coiled tungsten filament into hooked leads, using tweezers. Clamps hooks around filament, using press, or welds filament wires to stem leads, using spot welder. Dips filaments and supports in getter solution or paints getter on lead wires. Trims lead wires from lamp base, using side cutters, and solders lead wires to base terminals, using soldering iron. Inserts screws into lamp base, when required. Positions and solders pre-focus rings to lamp bases, using soldering equipment. Inserts lamps in sockets of aging device, turns control to specified setting, switches on device and allows lamps to age to stabilize their electrical characteristics. Switches off aging device and cleans lamps, using alcohol and cloth.

8531-272 ASSEMBLER, MOTOR-VEHICLE-LIGHTING FIXTURES(electric. equip.)
DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles component parts to fabricate automotive-lighting fixtures, such as parking lights, tail-stop-turn signal assemblies and dome and trunk-light assemblies:

Bolts, screws, rivets or crimps components, such as bulb sockets, springs and lenses, to lamp shell in specified order, using hand tools. Solders or crimps connecting wires to sockets and terminals, using soldering iron or crimping tool. Inspects component parts for defects and rejects defective items.

8531-292 ASSEMBLER, AUXILIARY-POWER AND MOTOR-GENERATOR-SET(electric. equip.)

DPT:381

GED: 4 SVP: 7 EC: I PA: M 3 4 7

Assembles gasoline, diesel or electric motor-driven generator sets that provide emergency or auxiliary electric power:

Positions, levels and aligns bearing pedestals on bedplate of auxiliary power unit (APU) and motor-generator set. Mounts gasoline or diesel engine alternator or direct-current generator on pedestals and support structures, using hoist. Inserts shims at specified locations to align couplings. Heats coupling and slides it over drive shaft, using portable gas furnace or torch. Assembles control panels, switches, relays and associated wiring, using hand tools, power tools, welding and soldering equipment. Secures side and end panels and doors, to form power unit housing. Starts power unit and motor-generator set and observes meters and test equipment to determine vibration, on and off-load voltage output, and frequency.

Makes minor adjustments to ensure equipment operates according to specifications. May specialize in assembling a specified type of set and be designated accordingly,

Engine-Generator-Set Assembler

8531-296 ASSEMBLER, MOTOR AND GENERATOR(electric. equip.)

DPT:381

GED: 4 SVP: 6 EC: I 6 PA: M 3 4 7

Assembles electric motors and generators, following production drawings and specifications, in repair or manufacturing establishment:

Removes burrs from parts, using file, and cleans parts, using solvent and compressed air. Fits bearings, end caps and seals to armature or rotor shaft, using hand tools. Positions and secures field coils to stator housing, using hand tools. Heats and shrinks thrust-collars and couplings on shafts, using oven or torch. Positions rotors and armature into stator housing. Secures assembly, using bolts and wrenches. Aligns heads to allow rotor or armature to turn freely and inserts shims to adjust air gap between rotor and stator, using precision-measuring instruments. Shapes carbon brushes to curvature of commutator by rotating them in seating fixture. Brazes or solders lugs to brush leads and fits brushes in holders. Connects brush leads to brush holders. Packs bearings with specified grease or oils bearings. Assembles and wires associated items, such as starters, junction boxes and control panels.

8531-300 COIL INSTALLER, MOTOR AND GENERATOR(electric. equip.)

DPT:384

GED: 4 SVP: 6 EC: I PA: M 4 7

Installs coils into slots of motor and generator armatures, rotors and stators:

Lifts or hoists units to work area, using crane. Removes burrs from core slots, using file or portable grinder. Inserts insulating material, such as fish paper or fibre board, into slots in armature core. Aligns coils in armature core slots and compacts them into position, using mallet, block and drift. Removes insulation, bends wire to form leads and connects stator coil leads, using pliers. Brazes or solders connections, using torch and alloy, such as silver solder. Tapes connections, and laces and ties coil leads to stator windings or commutator ground, using tape hook. Tests coil insulation for short circuits to ground, using electrical-test equipment.

May remove and replace defective coils. May carry out repairs, such as replacing V-rings, turning down commutator on lathe and undercutting mica insulation between commutator bars. May wind new coils on armatures, stators or rotors of used motors.

8531-304 ARMATURE BANDER(electric. equip.) DPT:382

GED: 3 SVP: 6 EC: I PA: M 4

Operates banding machine to wind glass-filament tape (fibreglass composition with adhesive backing) or steel wire around armature of electric motors and generators to ensure that coils remain positioned in armature core slots when armature rotates:

Lifts or hoists armature to horizontal spindle of banding machine. Shapes and positions exposed parts of coils, as specified, using hide-faced hammer. Mounts spool of specified tape or wire and winds it through machine guides. Wraps sheet of insulation around core when wire is used and attaches wire to pin wedged in core or wraps first turn around armature and twists end around turn, using pliers. Inserts metal clips under wire and starts machine to wrap glass- filament tape

or wire around armature. Guides wire or tape manually or with mechanical guide to maintain constant tension. Crimps metal clips over wire and solders wire in place.

8531-308 COIL WINDER(electric. equip.)

DPT:382

GED: 3 SVP: 6 EC: I 5 6 PA: M 4 7

Operates coil-winding and forming machines to wind and shape coils for heavy-duty electrical equipment, such as generators, motors and transformers:

Studies production specifications and drawings to determine wire type and size, winding block or form, lead lengths, tap position and location of cooling ducts. Places specified mandrel, form, spools of wire and sheet insulation in position. Inserts end of strap or round conductor into slot of mandrel. Starts machine to wind wire onto transformer form and to wind sheet insulation over each layer of winding. Observes counter, stops machine and brazes taps to winding at specified locations, using welding equipment and hand tools. Inserts wooden or plastic blocks between turns, to form cooling ducts. Adjusts wire tension, by turning screws. Pounds strap or other conductors to maintain coil shape and contour, using rubber or leather-covered mallet. Tends machine that compresses and shapes armature, rotor and field coils to specified contour. Verifies coil dimensions, using rule or template. Places insulated sleeving over coil leads.

May specialize in winding a specific type of coil and be designated accordingly; for example, Armature-Coil Winder Transformer-Coil Winder

8531-312 ASSEMBLER, CARBON BRUSHES(electric. equip.)

DPT:684

carbon-brush maker.

GED: 3 SVP: 5 EC: I 7 PA: L 4 7

Assembles carbon brushes for electric motors and generators, performing any combination of following duties:

Grinds carbon blocks to specified shape and size, using grinding machine, wedge and bevel. Impregnates carbon blocks with resins or waxes, using vacuum-impregnating tank. Drills holes in carbon block, using drill press. Cuts flexible copper connecting leads to specified length, using wire-cutting machine. Feeds machine that inserts wire into drilled holes. Tamps copper powder into hole to secure lead, or secures lead with rivet, clip, screw, cement or by soldering. Secures copper eyelet or lug to free end of wire, using crimping press. Immerses brush in electroplating solution specified for high-current brushes. Stamps brush with manufacturer's name or identifying information, using die.

May assemble carbon wafers to form laminated brushes.

8531-316 COIL FORMER, HEAVY-DUTY(electric. equip.)

DPT:684

GED: 3 SVP: 5 EC: I PA: M 4 7

Forms single and half turn armature, rotor or stator coils from bar or strap wire:

Cuts bar or strap wire to specified length, using bench cutting machine or hand tools. Taps wire strap over surface plate to straighten, using mallet. Bends wire to specified shape, using bending fixture, or pounds wire over former, using mallet and fibre blocks, to form coil. Tapes bar wires of similar shape together to form multilayer coil. Drills holes in coil ends, using portable power drill. Tins coil ends, using solder pot. Attaches connecting lugs, using hand tools, or solders on connecting lug, using soldering equipment.

May be designated according to coil formed; for example, Former, Armature Coil Former, Rotor Coil

8531-320 UNDERCUTTING-MACHINE OPERATOR(electric. equip.) DPT:682

GED: 3 SVP: 4 EC: I PA: M 4 7

Operates machine to undercut mica insulation between commutator segments of electric motor and generator:

Mounts commutator on carrier arbor of machine, and saw blade to machine spindle, and positions and secures them with spacing collars, using hand tools. Raises or lowers machine table to bring commutator to level of saw. Moves commutator back and forth under saw to certify correct positioning of mica for cutting. Turns handwheel or crank to regulate depth of cut. Starts machine and moves control to advance

commutator into rotating saw which undercuts mica insulation. Measures accuracy of cut, using ruler or jig. Removes burrs from edges of commutator segments, using file.

8531-324 ASSEMBLER, COMMUTATOR(electric. equip.) DPT:684
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Assembles commutators for electric motors and generators:
Aligns conducting bars and mica spacers in stacking sleeve, by tapping with soft hammer, and verifies alignment visually or with square and surface plate. Places bar assembly into pressing fixture and clamps bars together, using hydraulic press, or fits clamp over fixture, and tightens, using torque wrench. Positions mica collar over V-shaped grooves at both sides of commutator, fits and secures V-rings over collar and secures them in position, using arbor press. Heats commutators to soften insulation, and compresses unit, using hydraulic press. Tightens heated assembly by adjusting clamps or tapping threaded ring, using hammer and drift. Checks insulation between bars, and between bars and frame of sleeve, using insulation tester. May cut mica insulation between commutator bars to specified depth, using undercutting machine. May assemble commutator and brush holders on motor, using hand tools.

8531-328 ASSEMBLER, ROTATING-FIELD COILS(electric. equip.) DPT:644
spider assembler.
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Assembles field coil and pole pieces on rotor spider to build rotating fields for synchronous motors, and alternators:
Fits pole pieces into dovetail grooves of spider (rotating field frame) and secures with keys, or bolts pieces to spider, using hand or power tools. Places field coils over insulated pole pieces and bolts pole shoes in position over coils and pole pieces, following production drawings. Secures slip rings to rotor shaft, using keys and bolts, or presses rings to shaft, using hydraulic press, or heats rings in oven and positions them over shaft. Connects coils together and to slip rings. May align, press and rivet laminations together to form pole pieces. May attach complete field-magnet assemblies to spider.

8531-332 COIL TAPER, HAND(electric. equip.) DPT:684
GED: 3 SVP: 4 EC: 1 PA: M 4

Winds asbestos, cotton, glass, mica or varnished cambric wrappers or tape around rotor and stator coils of electric motors and generators to provide insulation and reinforcement:
Removes insulation from coil ends by burning, using torch, or immerses enamelled wire in chemical solution to remove enamel. Cleans coil ends, using sandpaper, or holds coil ends against revolving wire brush. Dips or sprays flux on wire ends and dips ends in solder pot to tin ends. Places coil in holding fixture, manually or using hoist, and secures in position. Straightens leads and affixes terminals, using hand tools. Removes temporary binding from coil, using hand tools. Brushes insulating varnish to end of tape and winds tape or covering in specified manner around coil and secures to coil, using adhesive tape. Cuts insulation to size, using scissors or knife. Brushes flux on terminal and dips in molten solder to ensure good electrical connection.
May check coil wire size, using micrometer or calipers to ensure conformance to specification. May tape a particular type of coil and be designated accordingly,
Field-Coil Taper

8531-336 ARMATURE CONNECTOR(electric. equip.) DPT:684
GED: 2 SVP: 4 EC: 1 PA: L 4 7

Inserts wire leads of armature coils into commutator slots, and welds leads to make good electrical contact:
Places armature in holding fixture, and removes insulation from coil ends, using knife and wire scraper. Shapes winding ends manually or using hammer and fibre block. Positions and seats commutator on armature shaft, using arbor press. Bends wire leads to conform to armature curvature and inserts leads into commutator slots, using hand tools. Winds and ties cord around coil leads to secure them in position. Cuts excess wire from leads, using wirecutter. Brushes insulating and protective varnish on armature coils. Welds leads to

commutator bars, using resistance welder. Tests coil continuity and insulation, using continuity and insulation testers.
May set up and operate machine to wind steel or polyester tape around armature.

8531-340 ASSEMBLER, LAMINATED CORE(electric. equip.) DPT:684
lamination stacker.
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Stacks, aligns and compresses steel laminations to make cores for electrical items, such as armatures, rotors and stators, or spins laminations on fixture shaft to align slots:
Places specified number of slotted disk-shaped laminations into cylindrical stacking fixture and over guide or mandrel. Compresses stack manually or with hydraulic press. Measures stack and adds or removes laminations to bring core to specified height. Taps edges to align laminations, using hammer and drift, and files edges and slots to remove burrs. Secures laminations by welding, using arc- welding machine or pushes bolt through laminations, affixes washer and nut and tightens, using hand tools.
May be designated according to type of core assembled; for example,
Pole-Shoe Assembler
Rotor-Core Assembler
Transformer-Core Assembler

8531-344 COIL SHAPER(electric. equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: M 4

Spreads and shapes coils to fit armature, rotor and stator slots, using coil-spreading machine:
Moves levers and handwheels of machine to position side and end clamps and spreader bars which set specified span and pitch angle. Places coil in clamp holders, and closes clamps, using hand levers. Actuates control to spread and shape coils and align and shape coil ends. Releases clamps, removes coil and verifies coil dimensions, using rule or template.

8531-348 ASSEMBLER, SMALL-ELECTRIC MOTOR(electric. equip.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles small electric motors and dynamotors used in appliances, power tools, radio communications equipment and instruments, performing any combination of following duties:
Secures field windings and brush holders to motor housing, using hand tools and holding fixture. Presses bushings and bearings into end brackets, using arbor press. Secures cooling fan and gears to shaft, and fits shaft in end bearings or bushings. Fits brush and spring assembly in brush holder, turns shaft to ensure free movement of brush, and files brushes to prevent binding. Secures power cord to motor frame, using clamp and crimping tools. Solders electrical leads to switch and motor, according to diagram, using soldering iron. Affixes name plate containing operational data to motor frame, using riveting machine. Lubricates gears and other moving parts, using oil can, or packs grease in gear box, using paddle.

8531-352 INSULATION CUTTER AND FORMER(electric. equip.) DPT:684
GED: 2 SVP: 3 EC: 1 6 PA: L 4

Cuts and forms insulation, gaskets and wedges used in electric motors and generators, performing any combination of following duties:
Measures and marks dimensions and holes in insulating materials, such as fibre, fibreglass and fish paper, using drawing or template and drafting instruments. Places marked sheet against shearing machine stop, and presses pedal to lower blade to cut strips, or operates bandsaw or circular saw to cut heavier material. Fits and glues insulation to retaining rings. Cuts holes in wooden or fibre strips to size specified, using jig saw.
May cure insulating material in gas-fired oven.

8531-356 LEAD FORMER(electric. equip.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Forms and prepares electrical leads of items, such as field coils and armature windings, for fitting into motors, alternators or other equipment:

Places coil or winding in clamping device of machine, and actuates control to close clamps to shape coil lead, or feeds wire into foot shear to cut leads to specified length. Sands ends of lead wires manually, to remove insulation, or feeds leads into wire sanding or stripping machine. Crimps, welds or solders terminals, eyelets or other parts to lead ends.

May be assigned a specific duty and be designated accordingly; for example,

Lead Cutter
Wire Stripper

8531-360 COIL-WINDING-MACHINE TENDER, AUTOMATIC(electric. equip.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tends automatic coil-winding machines that wind fine wire onto bobbins and forms, or into slots of small armatures to fabricate field coils, solenoid coils, motor-armatures and similar components:

Places spool of wire on machine spindle, and threads wire into machine guides and tensioner. Places bobbin, coil form or armature into holding device of machine, and attaches wire end into slot in item to be wound. Sets counter and starts machine that winds specified number of turns on bobbin or into armature slots. For layer-wound coils, stops machine and inserts insulating-sheet material between layers. Bends wires into armature grooves, and twists coil leads together for attachment to commutator. Cuts wire with wire cutters, and removes wound bobbin or armature.

8531-364 LAMINATION-STACKING-MACHINE TENDER(electric. equip.) DPT:685
GED: 2 SVP: 2 EC: 1 6 PA: L 4 7

Tends machine that stacks steel laminations used in armatures, stators and field coils of motors and generators:

Places laminations and spacers in holding device of machine, manually, or using lift. Starts machine which dispenses specified number of laminations and spacers required for each core, and deposits them to form stack. Places stack in automatic welding machine to weld laminations into individual cores, or inserts rivets into holes in laminated core and feeds core into riveting machine to secure laminations.

Other Electrical Equipment Fabricating and Assembling Occupations

8531-384 through 8531-448

8531-384 FITTER-ASSEMBLER, ELECTRICAL-CONTROL EQUIPMENT(electric. equip.) DPT:381
GED: 4 SVP: 7 EC: 1 6 PA: M 3 4 7

Assembles and fits units, components and parts in cabinets or on panels to fabricate equipment, such as automated-processing controls and electrical distribution panels:

Measures to locate reference points, and drills and taps holes in cabinet or panel, to mount assemblies, components and parts, using hand tools and power tools. Mounts components on panels, such as transformers, circuit breakers, and switches with bolts and screws, in predetermined order, following drawings, and using hand tools and power tools. Selects wire, cuts, bends and strips insulation from wire ends to fabricate cable, using hand tools, and wire-cutting- and-stripping machine. Affixes terminal lugs and other connecting devices to cable-wire ends, using hand tools, crimping machine and soldering equipment. Checks components and wiring for shorts or leakage to ground, using electrical-test equipment. Adjusts clearance of relay and circuit-breaker contacts, according to specifications, and using hand tools and feeler gauge. Adjusts mechanical parts, such as drive belt and pulleys. Bends, cuts threads, and installs conduit or armoured cable, using hacksaw, pipe cutter and conduit bender. Connects panel or equipment to power source. Switches on power, and actuates switches and controls in prescribed sequence to determine if it meets performance specifications. Replaces defective components, using hand tools and power tools.

8531-388 ASSEMBLER, HEAVY-DUTY TRANSFORMER(electric. equip.) DPT:381
GED: 4 SVP: 7 EC: 1 5 6 PA: M 2 4 7

Assembles electric distribution and power transformers, following manufacturers' specifications:

Moves component parts to work station, using overhead crane or other material-handling device. Assembles core laminations, following production drawings. Compresses laminations, using press or clamps and secures them by inserting bolts through laminations or strapping them with steel, using strapping machine. Lowers and positions laminated core into transformer-coil assembly, using hoist. Drives fibre and impregnated wooden wedges between coil and core, to achieve specified spacing. Brazes, silver-solders, or crimps terminals to transformer-coil leads. Assembles transformer support structure, such as base, angle-iron frame, terminal board, oil-filled tap-selector switch and oil tank, using welding equipment, jigs and hand and power tools. Attaches terminals to tap-changer switch, following production drawings and using power tools. Raises and positions transformer assembly on support structure in tank, using hoist. Connects transformer terminals to terminals on tank, using connecting straps. Secures connecting straps from outer transformer terminals to panel, using power tools. Fits tank cover and welds cover to tank, using welding equipment. Fills tank with specified transformer oil, using oil supply line.

8531-392 CALIBRATOR, ELECTRICAL CONTROLS(electric. equip.) DPT:381
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Calibrates electrical controls, such as thermostats, oil-burner controls, and pressure-vacuum switches, under simulated operating conditions, using hand tools and test equipment:

Places probe of temperature-actuated control in hot-water bath, and observes meter and thermometer that indicate contact closing and opening at specified temperatures. Places thermostats, and refrigeration and air-conditioning controls in air stream, and places electrical fixtures on heated surface or in environmental chamber to subject items to normal operating temperatures. Observes meters, thermometers and timers to assess operating characteristics of controls. Attaches tubing from vacuum devices to pressure-vacuum switch, and observes pressure gauge and meter to determine at what pressure switch contacts open and close. Adjusts contact spacing screws and timing controls, to set controls to meet operating specifications. Disassembles faulty controls, replaces defective parts and reassembles controls, using hand tools.

May calibrate specific types of controls and be designated accordingly; for example,
Pressure-Vacuum-Switch Calibrator
Thermostat Calibrator

8531-396 ASSEMBLER, HEAVY-DUTY CAPACITORS(electric. equip.) DPT:682
GED: 3 SVP: 5 EC: 1 5 6 PA: M 4

Assembles heavy-duty capacitors used for electric power- transmission equipment:

Operates shear and brake machines to cut and bend insulation material, and hydraulic press to form capacitor core into cylindrical shape. Fits capacitor core in wrapping machine, and actuates controls which starts mechanism to wrap a specified number of layers of insulating material around core, and applies tape to secure insulation. Secures resistors to capacitor terminals, using crimping tool. Pushes capacitor leads through porcelain cover bushings, solders leads to feed-through terminals, and places cover over cylindrical core. Places cores in position on power press, sets metal capacitor container in machine fixture, and actuates control to force container over core. Secures top insulator assembly to can, using soldering equipment. Affixes nameplates, using hand tools.

May operate capacitor-winding machine. May repair defective capacitors.

8531-400 HEATING-ELEMENT COIL FORMER(electric. equip.) DPT:682
GED: 3 SVP: 5 EC: 1 PA: M 4 7

Operates wire-coiling machine to coil resistance wire for electrical appliance-heating elements:

Selects wire of specified gauge and mounts reel of wire on machine

spindle. Inserts arbor in wire-coiling machine to make coils of specified diameter. Positions photoelectric device, using hand tools and jeweller's loupe, to activate automatic-cutting mechanism that cuts coiled wire to specified length. Threads wire through guides and onto arbor, and starts machine. Attaches random sample of coils to contacts of ohmmeter, actuates switch and reads resistance value of coil on meter. Readjusts wire-coiling machine to keep coils within specifications. Places lengths of coiled wire in trays, and lowers trays into degreasing tank, to clean wires.

May operate manually-controlled machine to wind resistance wire for use inside heating element.

8531-404 IMPREGNATOR, ELECTRICAL EQUIPMENT(electric. equip.) DPT:682
GED: 3 SVP: 5 EC: 1 PA: M 4

Operates equipment to impregnate armatures, stator and field-coil windings of electric motors and transformer windings with insulating material, by one of following methods:

1. Selects mandrel for transformer core and coil assembly. Actuates controls of hydraulic press to force mandrel into or from core and coil assembly. Loads blocked core and coil assembly, field coil, or stator winding into vacuum impregnating device, manually or using hoist. Actuates controls to achieve vacuum and opens valves to admit impregnating fluid. Removes component after specified time and loads into oven, manually or using hoist. Adjusts oven controls to desired temperature and removes components after specified time. Removes excess insulating material from component, using sawing machine. Lowers component into tank filled with acid solution, to remove insulation from connecting leads, and through neutralizing-solution tanks, to neutralize acid. 2. Adjusts holding fixture of impregnating machine and positions component in fixture. Mixes varnish to obtain specified consistency. Connects leads of component to power source to cause windings to heat and oscillate slightly. Saturates component, using special spray gun. Sets machine controls for optimum temperature and curing time, and removes component from machine after curing has been achieved.

May test component to ensure insulation properties meet specifications. May impregnate a particular component and be designated accordingly; for example, Transformer-Coil Impregnator

8531-408 ASSEMBLER, ELECTRICAL METERS(electric. equip.) DPT:684
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Assembles electrical panel-mounted meters used to measure radio frequency, alternating and direct currents, and voltages:

Winds fine wire around coil forms for moving-coil assembly of meters, using coil-winding machine. Positions parts, such as pointer, hairsprings and jewels, in specified sequence and location, following production drawings, and using hand tools. Attaches and solders leads to items, such as resistors, diodes and meter terminals, using soldering equipment and watchmaker's hand tools. Secures specified scale to meter face, using small screwdriver. Cements glass or transparent plastic to meter case and cleans glass, using solvent and cloth. Inserts completed meter assembly into meter case, using screws and screwdriver. Adjusts electrical-test jig as specified for meter, places meter in test jig, and observes pointer for desired deflection.

8531-412 ASSEMBLER, ELECTRICAL ACCESSORIES(electric. equip.) DPT:684
GED: 3 SVP: 4 EC: 1 6 PA: L 4 7

Assembles small electrical components, such as light sockets, switches, receptacles and plugs, performing any combination of the following duties:

Cuts glass tubing, welds leads to switch contacts, adds mercury and fuses glass to make mercury switches, using glass-cutting and butt-welding equipment and gas torch. Fits together small parts, such as switch-contact fingers, lamp-socket bases, pull-chains and switch-keys in specified sequence, according to production drawings, using hand and power tools. Feeds hoppers of automatic machines with component parts of plug fuses, and removes assembled fuses from machine. Examines samples of machine assembled items for assembly. Tests action of moving parts by actuating switch-keys and pull-chains, to detect defective assembly or faulty parts.

May be designated according to item assembled; for example, Mercury-Switch Assembler

Toggle-Switch Assembler

8531-416 CORE MAKER, TRANSFORMER(electric. equip.) DPT:684

GED: 3 SVP: 4 EC: 1 5 6 PA: M 4

Fabricates laminated transformer cores for heavy-duty transformers, performing any combination of following duties:

Places reel of steel-strip-core-material on spindle of core-winding machine. Places core form on machine mandrel and attaches steel strip to form. Sets machine for required number of turns and starts machine. Checks wound core, using template. Severs steel strip from reel, using hand snips. Secures loose end to core body, using tack welder, and removes core from form. Places core on conveyor which moves it to and from annealing department. Presses annealed core into rectangular shape, using assembly press, and secures with clamps. Cuts out portion of core to form air gap, using core cutter. Inserts core ends into transformer coil to form laminated core.

May be designated according to duties assigned; for example, Core Cutter
Core Winder

8531-420 ASSEMBLER, HEAVY-DUTY RESISTORS(electric. equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: M 4

Assembles special-purpose heavy-duty resistors used in controlling speed of electrically-operated equipment and machinery:

Locates helical-shaped resistance coil over metal pins on assembly plate. Fits and cements asbestos strips, cores, dividers, ceramic strips and spacers to form resistor-coil assembly. Fits insulators and center plate in coil, and attaches end plates to secure coil assembly. Aligns and bolts specified number and type of resistor-coil assemblies to support frame. Slips insulated tubing over bolts to insulate coil assembly from mounting frame. Cuts connecting wires, and bends and connects them to terminals of resistor-coils, using wire cutter and crimping tool.

May fit round coils over ceramic forms, using press, and fit and secure connecting clamp to each end of winding, to form element for heavy-duty potentiometer or rheostat, using clamping press.

8531-424 MICA-PRODUCTS MAKER(electric. equip.) DPT:684
GED: 2 SVP: 4 EC: 1 7 PA: L 4

Fabricates mica products, such as laminated sheet, washers and tubing, for use as electrical insulation, by one of the following methods:

1. Selects mica sheet of specified grade, and cuts to size, following production orders and using table saw. Places specified number of similar mica sheets into holding jig and dips sheets in cement. Heats and compresses sheets to fabricate mica-sheet stock of specified thickness. 2. Cuts mica-sheet into strips, and recuts strips into squares, following production orders. Drills centre holes in squares to form washers, using holding jig and drill press. Stacks square washers in jig, immerses stacked washers in cement, and heats and compresses them to fabricate laminated washer stock. Fabricates round washers from laminated square stock, using lathe, or from sheet stock, using punch press. 3. Places mica-sheet on work table, and brushes cement along two sides, following production orders. Places cylindrical jig over sheet, folds sheet around jig, and rolls it over work table. Removes jig, places elastic bands around tubing, and places in upright container to allow glue to set. Places tubes in heated press to press glued edges together, to form mica tubing.

May fabricate a specific product and be designated accordingly; for example, Mica-Tube Maker
Mica-Washer Maker

8531-428 TUBULAR-HEATING ELEMENT MAKER(electric. equip.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Operates equipment to insert coiled nichrome wire and insulating material into metal tubes, and to coil wire and tubing assembly into configuration required for heating elements of stoves, electric-water heaters, automobile block-heaters, and small appliances:

Loads tubes and nichrome-wire coils into machine and dumps magnesium oxide into machine hopper. Attaches tubes to holding

device in machine, and attaches wire coils to hook. Starts machine that pulls wire coil into tubes, and injects magnesium-oxide insulation into tube. Secures insulated bushing inside coil, and attaches terminal to wire, using crimping tool. Places length of tubular-heating- element in bending machine that bends element ends, and guides element into rotating coiling-head that forms element for electric stove or other applications. Operates press to flatten element by specified amount. Crimps outer tubing ends over insulating bushings, using crimping press.

8531-432 TAPING-MACHINE TENDER(electric. equip.)

DPT:685

GED: 2 SVP: 3 EC: 1 PA: L 3

Tends taping machine that winds cotton, paper or plastic tape around armature, rotor and stator coils and wiring harness:

Places roll of tape onto machine spool holder and threads end through machine guides. Ties tape to wiring harness or coil bar to enable coil ring to turn around coil or harness. Adjusts controls to regulate speed of winding and to maintain correct tension to wind tape tightly and uniformly. Cuts tape and secures end by looping it through last turn.

8531-436 ASSEMBLER, SPARK-PLUGS(electric. equip.)

DPT:686

GED: 2 SVP: 2 EC: 1 6 PA: L 4

Feeds component parts into and removes completed spark plugs from assembling machines:

Places spark-plug components, such as insulators, electrodes, terminals, gaskets and bases, into hoppers or feed mechanisms of machines that automatically assemble spark plugs, and add and bake insulating compound. Removes completed items from machines, and inspects for cracked insulators or missing parts and other defects.

May assemble low volume, odd size or special order spark plugs by hand.

8531-440 ASSEMBLER, THERMOSTAT(electric. equip.)

DPT:684

GED: 2 SVP: 2 EC: 1 PA: S 4 7

Assembles thermostats used in air-conditioning, heating and refrigeration equipment:

Positions parts in specified sequence, following production drawings. Screws, rivets or force-fits together, parts; such as, dials, dial shafts, side plates, bellows, diaphragms and micro-switches, using hand tools, pneumatic tools and small hydraulic press. Lubricates pivot points with specified lubricant. Applies locking compound to screws, using oil can.

8531-444 ASSEMBLER, TRANSFORMER-STATIC-PLATE(electric. equip.)

DPT:684

GED: 2 SVP: 2 EC: 1 6 PA: M 4 7

Assembles static plates used as a protective device for high- voltage power transformers:

Cuts foil and fullerboard to specified dimensions, using scissors and band saw. Applies glue to surface of fullerboard, positions foil strip over glued surface, positions wires along foil edge, and solders connecting leads to edge wires. Places identical piece of fullerboard over edge wires and foil, and applies temporary strapping to hold assembly in position. Places assembly in hydraulic press, and actuates controls to apply pressure and heat for specified time. Removes cured static plate from press.

8531-448 CLAMPER, TRANSFORMER ASSEMBLY(electric. equip.)

DPT:887

GED: 2 SVP: 2 EC: 1 PA: M 4

Positions and secures steel plates on two sides of laced transformer-core assembly, to compress and position laminations and core, and to provide a rigid structure:

Positions pre-drilled plates on transformer core assembly, manually, or using hoist. Inserts bolts through upper plate, core assembly and lower plate. Positions nuts and washers and tightens, using power wrench.

8533-ELECTRICAL AND RELATED EQUIPMENT, INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with installing and repairing electrical equipment; such as, household appliances, domestic air-conditioning, and refrigeration equipment. Activities include: mounting, and connecting equipment to power sources; analyzing faults with test instruments; disassembling and replacing defective parts and internal wiring; and reassembling and testing operation of equipment. Construction electricians and repairmen are classified in Unit Group 8733, CONSTRUCTION ELECTRICIANS AND REPAIRMEN.

8533-110 ELECTRICAL REPAIRMAN(electric. equip.)

DPT:261

GED: 4 SVP: 7 EC: 1 6 PA: M 2 3 4 5 7

Repairs, maintains and installs electrical wiring and equipment, such as motors, lighting fixtures and switching and control equipment in commercial, industrial, institutional or other establishments:

Locates and determines reason for electrical failure or equipment malfunction, using electrical-test instruments, such as ammeter and voltmeter. Examines electrical equipment, such as motors, generators and circuit breakers, to detect undue vibration, noise, and overheating. Repairs or replaces defective elements, fuses and motors, using hand tools. Burnishes, adjusts and cleans switches and relay contacts. Cleans and undercuts motor commutators and replaces carbon brushes, bearings and wiring, using hand and power tools. Conducts tests, such as on-and-off load current, and speed in revolutions-per-minute of motors, using electrical and mechanical- test equipment. Installs wiring and control equipment for new machines. Conducts continuous preventive maintenance program and maintains applicable records. Gives directions to helpers.

May repair or replace mechanical, pneumatic, hydraulic or electronic components of electrical equipment. May be designated according to equipment repaired or work location; for example,

Electrical Repairman, Crane Maintenance

Electrical Repairman, Machine Shop

Electrical Repairman, Sugar Refinery

8533-114 ELECTRICIAN, AUTOMOTIVE(motor vehicle)

DPT:261

automotive-electrical repairman.

GED: 4 SVP: 7 EC: 1 PA: L 3 4 5 7

Repairs and overhauls electrical components in vehicles, such as automobiles, buses and trucks:

Determines cause of electrical malfunction, using electrical test equipment. Adjusts distributor breaker-point gap, using feeler gauge and adjusts timing, using dwell meter or timing light and hand tools. Tests and replaces defective alternators, generators, starters and related items, such as voltage regulators, using electrical test equipment and hand tools. Repairs or replaces defective ignition and electrical wiring. Replaces defective parts, such as fuses, lamps and switches.

May be designated according to specialty; for example,

Electrician, Bus

Electrician, Truck

8533-118 REFRIGERATION MECHANIC(mech. equip., n.e.c.)

DPT:261

GED: 4 SVP: 7 EC: 1 6 7 PA: M 3 4 5 6 7

Installs and repairs industrial and commercial refrigerating and cooling systems according to drawings and specifications:

Lays out reference points, according to established plans, for installation of structural and functional components, using measuring instruments, such as tape, transit, levels and square. Drills holes and installs mounting brackets and hangers into floor and walls of buildings, using tools, such as portable drills, wrenches and screwdrivers. Gives directions to contractors in hoisting and lifting of components into position. Installs structural and functional components, such as motors, controls, switches, gauges, valves, pumps, compressors, condensers, cores and pipes, by screwing, bolting, riveting, welding

and brazing. Cuts, threads, and connects pipe to functional components of refrigeration system, using soldering equipment, hack saws and pipe cutters. Pumps specified gas or fluid into systems, using vacuum pump, or turns valves to allow gas to flow into system under pressure. Starts system and observes operation. Watches gauges and instruments and adjusts mechanisms, such as valves and controls, to regulate level of fluid, pressure and temperature in system. Dismantles malfunctioning systems and tests components, using electrical and pneumatic-testing equipment, meters and pressure gauges. Replaces or adjusts defective or worn parts to repair system. May specialize in installing systems and be designated accordingly, Refrigeration-System Installer

8533-122 REPAIRMAN, ELECTRIC MOTOR(electric. equip.)
DPT:261
GED: 4 SVP: 7 EC: 1 6 PA: L 4 5 6 7

Repairs electric motors, generators and related equipment: Disassembles motor, and tests armatures, stator and field coils to detect faulty components, using growler and insulation tester. Examines bearings, shafts and bushings for wear and defects, and removes and replaces defective items. Refaces worn commutators, using lathe, and undercuts mica between commutator segments, using undercutting machine. Replaces defective field coils, using hand tools. Refinishes carbon brushes to contour of motor commutator, using jig, and replaces brushes. Reassembles motors and generators and checks to ensure bearings, bushings and end-play meet specified tolerances. Clamps motors in test fixture, connects voltage supply and observes test meters to ensure torque, horsepower rating and speed, meet specifications. Places generators in test jig, and tests to ensure they meet rated output voltage and current. Inspects auxiliary equipment, such as motor starters, relays, and thermal and overload-circuit breakers, for wear and damage and repairs or replaces defective items. Records parts replaced and time spent. May specialize in repair of automotive-electric motors, and generators and be designated accordingly, Automotive-Generator-and-Starter Repairman

8533-126 REPAIRMAN, MAJOR APPLIANCE(electric. equip.)
DPT:261
appliance serviceman and repairman.
GED: 4 SVP: 7 EC: 1 6 PA: H 3 4 5 7

Installs, services and repairs major-electrical appliances, such as air conditioners, clothes driers, refrigerators, stoves and washing machines, in customers' homes or in shop: Connects appliance to power source. Switches on appliance and manipulates controls to ensure correct operation. Demonstrates appliance operation and explains features. Queries customer regarding unserviceable appliances or refers to work order to assist in fault analysis. Observes operation of appliance and listens for unusual sounds to detect excessive vibration, overheating and loose parts. Makes continuity tests, resistance, voltage and current measurements to locate fault, using electrical-test equipment. Traces electrical circuits, following diagram, and checks for faults such as, short circuits and grounds. Disassembles appliances and examines mechanical parts, such as belts, gears and pumps. Examines, adjusts and calibrates timers and thermostats, and adjusts and burnishes contacts, using hand tools. Replaces defective parts, such as switches, belts, gears, motors and timers. Reassembles appliance, checks for fluid or gas leaks and adjusts and lubricates moving parts, using hand tools and lubricating equipment. Prepares itemized bill detailing parts replaced and man-hours expended.

8533-130 ELECTRICIAN, AIRCRAFT(electric. equip.)
DPT:281
GED: 4 SVP: 7 EC: 1 6 PA: M 3 4 7

Installs, repairs and services aircraft electrical equipment at manufacturing or repair establishment: Installs prefabricated cable assemblies and bonding connections, following drawings and using clamps and power nut-driver. Attaches and secures terminal lugs to terminals of electrical components, such as relays, electrical instruments and junction boxes. Connects wiring from junction boxes to various systems, such as lighting, flying control, fuel and hydraulic. Observes and checks for correct operation of relays, instruments and lighting, by actuating switches and other controls. Measures voltage, current and resistance at specified locations to diagnose faults, using volt-ohm-milliammeter. Repairs or replaces

defective components and wiring, using hand and power tools. Incorporates modifications to electrical system, following drawings and using hand and power tools and electrical test equipment.

8533-134 ELECTRICIAN, MARINE EQUIPMENT(electric. equip.)
DPT:281
ship's electrician.
GED: 4 SVP: 7 EC: 1 5 6 PA: L 3 4 7

Repairs and maintains electrical equipment, such as generators, motors, and intercommunication systems on board ship, using electrician's hand tools and following wiring diagrams: Actuates distribution panel controls to switch-in standby generator when electrical load approaches operating capacity of generator. Performs routine inspections of electrically-driven equipment, such as pumps, blowers and refrigeration equipment, to detect malfunctions. Tests wiring for short circuits by testing connected loads and wiring, using volt-ohm-milliammeter and insulation tester and following electrical-wiring diagrams. Replaces motors, relays and wiring to correct malfunction, using electrician's hand tools. Replaces fuses, light bulbs and fluorescent lamps, using hand tools and step-ladder. Investigates failures in intercommunication equipment and replaces defective components, such as amplifiers, speakers and switches, using hand tools.

8533-138 ELECTRICIAN, RAIL TRANSPORT(electric. equip.)
DPT:281
GED: 4 SVP: 7 EC: 1 6 PA: M 3 4 7

Installs and maintains electrical wiring and equipment, such as storage batteries, motors, generators and lighting fixtures of railway locomotives and coaches, streetcars and subway coaches: Measures, cuts, threads, bends and installs electrical wires in conduit, using hacksaw, pipe-threading tools and electrician's hand tools. Installs conduit or other cable on walls and ceilings, using fastening devices and hand tools. Attaches conduit or other cable to junction boxes and fits and connects outlets, lighting fixtures and other wiring, using hand tools and soldering equipment. Tests electrical equipment, such as electric motors, generators and circuit breakers to locate faults, using electrical-test equipment. Replaces motor and generator brushes, cleans commutators and burnishes relay contacts, using hand tools. May install heating and air-conditioning equipment.

8533-142 REPAIRMAN, ELECTRICAL INSTRUMENTS
(electric. equip.)
DPT:281
GED: 4 SVP: 7 EC: 1 7 PA: L 4 7

Tests, repairs and calibrates electrical instruments and electrically operated measuring and recording devices, such as ammeters, resistance bridges and temperature controlling and recording instruments: Tests electrical-instrument equipment to determine factors, such as internal resistance and shunt and multiplier resistance, using wheat-stone bridge, potentiometer and other testing devices. Disassembles instruments, using hand tools. Examines parts for defects. Measures, cuts and fits glass into meter cases, using glass cutter and bonding cement. Replaces bearings, shafts, moving coils of meters, shunts and resistors, using jewellers' tools and soldering equipment. Tests new and repaired instruments by comparing meter readings against secondary standards, or test panel. Adjusts meter calibration by altering shunt and multiplier resistor values. Fabricates parts such as shafts, bushings and other mechanisms, using precision lathe and measuring equipment. Lubricates moving parts, using specified lubricant. Reassembles equipment, using hand tools. Records data on item repaired, such as type of instrument and nature of repairs made. May specialize in repairing specific electrical instruments and be designated accordingly, Dynamometer Repairman

8533-146 WIRER AND REPAIRMAN, OFFICE MACHINES
(electric. equip.)
DPT:281
GED: 4 SVP: 7 EC: 1 PA: L 4 7

Wires and repairs punched-card office machines in manufacturing establishment or on customers' premises, following manufacturer's drawings and specifications: Installs prefabricated cable assemblies in machines, such as collators and bookkeeping and keypunching machines. Secures cable at specified locations in machine, using plastic cable clamps and mounting

hardware, and tightens clamps, using hand tools and nut driver. Connects coloured or numbered leads from cable break-out locations to components, such as motors, relays, switches and printed-circuit boards. Attaches and secures wire ends to components by crimping leads to lugs, fitting leads to connector pins or by soldering tinned ends to component terminals, using crimping tool and soldering equipment. Connects machine to special purpose tester, switches on machine and tester, actuates controls and observes oscilloscope and meters to detect malfunctions. Corrects malfunctions, by adjusting relays, resoldering connections and by replacing defective parts. Inspects, tests and repairs previously wired units. Modifies machines on customers' premises, to update them to latest configuration.

8533-150 REPAIRMAN, REFRIGERATION UNIT(mech. equip., n.e.c.) DPT:381
refrigerator serviceman.

GED: 4 SVP: 7 EC: I 6 PA: M 4 6 7

Repairs refrigeration units to specifications:

Studies reports from inspection department or customers. Observes functioning of components, such as controls, fan, condenser, evaporator and compressor, to determine cause of malfunction. Tests gas pressure with pressure gauge, and tests for gas leaks, using gas-leak tester. Charges unit with refrigerant, using portable gas cylinder or console charging unit. Drains oil and pumps gas from unit prior to removing cooling unit. Melts soldered or brazed joints to dismantle unit, using hand tools, torch and soldering equipment. Removes and replaces defective components. Repairs defective joints, using soldering and brazing equipment. Reassembles and reinstalls cooling unit, using hand tools. Starts unit and checks operating parameters, using mechanical and electrical test equipment. Records cause of malfunction, repairs made and parts replaced.

8533-154 INSTALLER AND REPAIRER, AUTOMATIC-PINSETTING MACHINE(electric. equip.; sport. & toy) DPT:261
pinsetter mechanic, automatic.

GED: 4 SVP: 6 EC: I PA: M 4 5 6 7

Installs and repairs automatic pinsetting machines used in bowling alleys:

Directs material handlers in positioning of equipment. Bolts machines in place, and connects them to electrical mains, using hand tools. Operates machine to detect malfunction. Measures and regulates sweep of rake and adjusts pin pick-up clamps. Removes panels to gain access to electrical components. Measures voltage at transformer, switch and relay terminals, using volt-ohm-milliammeter. Actuates switches and relays to ensure correct operation. Replaces defective parts, such as motor brushes, relays and switches, using hand tools. Adjusts cams, stops and relay contact gaps to specified settings, using hand tools. Maintains inventory of spare parts and orders replacements as required. Records time spent and parts used on repairs.

8533-158 INSTALLER-SERVICEMAN, DENTAL EQUIPMENT (scient. & ind. equip., n.e.c.) DPT:261
GED: 4 SVP: 6 EC: I 6 PA: H 3 4 7

Installs and services dental office equipment, such as hydraulic chairs and electric and pneumatic drills:

Discusses equipment operation and installation with dentist. Installs new and reconditioned equipment, using hand tools and power tools. Manipulates controls of equipment, such as hydraulic chairs, dental drills and water jets, to assess equipment serviceability. Checks for leaks in hydraulic mechanisms, electrical faults, rated operation of dental X-ray equipment and operating speed of dental drill in revolutions per minute, using pressure gauges, volt-ohm-milliammeter and tachometer. Repairs or replaces defective components, such as motors, flexible tubing, and clutches. Performs routine servicing of equipment, such as lubricating gears and repacking bearings, following manufacturer's specifications. Repairs or replaces ancillary equipment, such as sterilizers, amalgamators and vibrators, using hand tools.

8533-162 REPAIRMAN, AIR-CONDITIONER (electric. equip.) DPT:261

GED: 4 SVP: 6 EC: B 6 PA: M 3 4 6 7

Services and repairs domestic air-conditioning units in private residences and small business establishments:

Queries customer, examines unit and listens to machine in operation, to diagnose malfunction. Dismantles machine or part of machine to gain access to defective part. Performs tests to enable further diagnosis, using mechanical and electrical test equipment and hand tools. Removes and replaces parts, such as switches, relays, fan motors, thermostats and filters, using hand tools and power tools. Adjusts controls and lubricates moving parts. Reassembles machine and makes necessary adjustments. Estimates repair costs, based on parts replaced and repair time. Transports machines requiring major repairs, to workshop, using truck. May repair units rejected by inspectors in manufacturing establishment.

8533-166 REPAIRMAN, ELECTRIC TOOL(electric. equip.) DPT:281

GED: 4 SVP: 6 EC: I 6 PA: M 4 7

Repairs electrical hand tools and bench-mounted devices, such as drills, sanders and grinders:

Removes housing-screws to gain access to motor. Examines motor assembly for frayed wires and loose connections. Removes brushes and examines them for wear. Tests switches and wiring for grounds, using insulation tester. Removes armature and examines commutator to detect raised mica and surface pitting. Tests armature for short circuited wires, using growler. Turns motor commutator, using lathe, and undercuts mica insulation, using undercutting machine. Grinds surfaces of brushes to contour of commutator, using jig, and replaces brushes in motor. Replaces defective parts, such as switches, gears, bushings and bearings. Packs gear-assembly housing with specified grease. Operates repaired tool to ensure that it functions properly.

8533-170 REPAIRMAN, PORTABLE APPLIANCE(electric. equip.) DPT:281

GED: 4 SVP: 6 EC: I 6 PA: M 4 7

Repairs household electrical appliances, such as toasters, vacuum cleaners and fans:

Consults with customer to assist in fault diagnosis. Examines appliance for mechanical defects. Switches on appliance and actuates controls. Observes and listens to detect symptoms, such as overheating, loose parts or undue vibration. Disassembles appliance to gain access to electrical and mechanical parts. Carries out voltage, current and resistance tests to detect open circuits in windings, wiring or in heating elements, using electrical test equipment. Removes and replaces defective parts, such as armatures, heating elements or switches, using hand tools, soldering equipment and miniature welding equipment. Reassembles appliance and checks operation. Enters time spent for labour and materials used on repair ticket. May be designated according to type of appliance repaired.

8533-174 REPAIRMAN, STORAGE BATTERY(electric. equip.) DPT:281

GED: 3 SVP: 6 EC: I 6 PA: M 4 7

Repairs and recharges industrial storage batteries:

Inspects batteries and carries out electrical tests to determine extent and cost of repairs. Scraps batteries determined not repairable. Melts sealing compound on battery cover, using gas torch. Loosens compound from sides of battery case, using putty knife. Removes acid and plates from cells, and flushes cell case with water to remove residue from bottom of cell. Replaces defective plates, using torch and lead or alloy bar, or replaces cell. Reassembles battery, and pours hot tar compound over cover. Fills cells with acid solution of specified concentration. Attaches battery-charger leads to battery terminals, switches on charger and adjusts charger control to obtain specified charging current. Monitors charging process and tests specific gravity of cells, using hydrometer. Performs specific tests to determine condition of individual cells, such as measuring voltage on load, and charging and discharging cells in specified manner to ensure cell or battery meets minimum performance criteria.

8533-178 INSTALLATION MAN, HOUSEHOLD APPLIANCE (electric. equip.) DPT:684
GED: 3 SVP: 6 EC: I 6 PA: H 3 4 7

Installs household appliances, such as driers, electric and gas stoves and washing machines:

Installs heavy-duty wiring for appliances, such as electric stoves and driers, using hand tools. Levels appliances, such as washers and driers by observing spirit level and adjusting levelling devices. Connects flexible hose of automatic washer to water supply, and gas stove to gas supply, using hand tools. Turns on appliance, observes operating cycle and adjusts controls to ensure it operates to manufacturers' specifications. Lights and adjusts pilot flame of gas stoves and examines valves and burners. Explains use, care and features of appliances to customer.

8533-186 ARMATURE WINDER, REPAIR(electric. equip.) DPT:684
GED: 3 SVP: 5 EC: I 6 PA: L 4 7

Winds armature to repair used motors and generators:

Inspects and tests armatures to determine repairs required, using insulation tester and growler. Removes insulation from ends of pre-wound and impregnated coils. Cuts sheet-insulating material and fits strips into slots on armature core. Winds wire manually into core slots or places armature into jig of winding machine, sets turn-counter and winds specified number of turns into armature slots. Shapes pre-wound coils and positions them in armature slots by tapping winding with mallet. Solders or brazes coil ends to commutator segments. Operates undercutting machine to undercut mica insulation below level of commutator bars. Tests repaired armature, using growler.

8533-190 BATTERY REPAIRMAN, PRODUCTION LINE (electric. equip.) DPT:684
GED: 3 SVP: 5 EC: I 6 PA: M 4 7

Repairs batteries rejected from production line by inspection personnel:

Tests specific gravity of rejected batteries and adjusts it to proper concentration by adding water or acid. Adds electrolyte to fill cells to specified level. Examines battery to ensure cells are connected in series, and removes, repositions and reconnects incorrectly connected cells, using torch. Heats asphalt compound on top of battery to correct poor sealing. Recharges batteries, using battery charger. Tests repaired batteries for performance, using electrical test equipment. Segregates and tags non-repairable batteries.

8533-194 COIL WINDER AND REPAIRER(electric. equip.) DPT:684
GED: 3 SVP: 5 EC: I 6 PA: M 4 7

Repairs defective armatures and field and rotor coils used in electric motor and generators:

Inspects coils and reviews production instructions to determine defect. Wraps insulating tape over bare spots, using tapehook and scissors. Removes defective leads, brush clips and connecting lugs from coil, and replaces parts with new ones, using soldering equipment or crimping tool. Winds replacement armature, rotor and stator coils directly into slots or onto forms. Wraps insulating tape over coil, manually or using coil-taping machine. Cuts and positions sheet insulation to fit slots. Positions coils in slots and taps them with mallet to position, compress and shape them. Connects coils in specified sequence, and solders, brazes or welds connections, using soldering or welding equipment. Applies insulating varnish to windings, manually or using impregnating equipment.

May specialize in one phase of repair and be designated accordingly; for example,

Coil Connector, Repair
Coil Winder, Repair

8533-198 TRANSFORMER-COIL WINDER(electric. equip.) DPT:684
GED: 3 SVP: 5 EC: I PA: L 4 7

Operates machine to wind various sizes and types of coils for replacement in light and heavy-duty transformers:

Strips old coils from power distribution-transformers to obtain or verify specifications, such as wire size and number of turns on primary and secondary windings. Secures form on mandrel of coil-winding

machine. Selects wire and attaches wire end to coil form and places feeder spool on machine. Starts machine and manually guides wire onto form. Saturates each layer with insulating varnish and places sheet insulation between each layer of winding. Observes turn-counter and stops machine when specified number of turns are wound. Removes form and wraps insulation around primary winding. Positions coils and lead wires as specified.

8533-202 REPAIRMAN, ELECTRIC SIGN(electric. equip.) DPT:383
GED: 3 SVP: 4 EC: O 6 PA: L 2 4 7

Repairs electric signs on site:

Visits electric sign locations at night to detect malfunctioning signs, and records location and nature of malfunction. Drives service vehicle to location, and gains access to sign, using ladder. Replaces parts, such as bulbs, fluorescent lamps, neon tubing, sockets, switches and flashers, using hand tools. Sets and adjusts timing devices to regulate on and off times of sign. Requisitions and keeps supply of spare parts.

8533-204 INSTALLER, DOMESTIC AIR-CONDITIONER (electric. equip.) DPT:664
GED: 3 SVP: 4 EC: B PA: H 2 3 4 6

Installs domestic air-conditioning units in private residences and small business establishments:

Inspects existing wiring on customer's premises to ensure that electrical circuits can handle additional load. Recommends wiring change to customer, or requests electricians to make changes. Assembles and mounts window-support brackets, and mounts supports on outer wall, using screw, hand tools and power tools or directs helper to perform these duties. Extends panels from air-conditioner unit to vertical sides of window frame, and secures them to window frame, using screws. Levels unit with adjusting screws or with shims. Starts machine, and adjusts temperature and fan controls to achieve desired cooling. Listens for unusual sounds and checks vibration to detect possible malfunctions. Instructs customer on operation and care of unit.

May service existing installations by replacing controls, air filters and belts, using hand tools.

8533-206 WIREMAN, AUTOMOTIVE(motor vehicle) DPT:684
GED: 3 SVP: 4 EC: I PA: L 3 4 7

Installs electrical wiring in buses, automobiles, trailers and similar vehicles:

Locates and marks positions for outlet boxes, switches and lights, following drawings and using hand and power tools. Threads wire or preassembled cable through holes in floor and through firewall grommets, and attaches wire or cable to frame or fender, using insulated fastening devices. Installs connectors for accessories, such as lights, windshield wipers and relays, and interconnects mating connectors. Attaches terminals to colour-coded wiring, using crimping tool, and connects terminals, following wiring diagram. Connects battery or external power source and actuates switches and controls to test wiring.

8533-210 APPLIANCE REPAIRMAN, PRODUCTION LINE (electric. equip.) DPT:684
GED: 3 SVP: 3 EC: I 6 PA: M 4 6 7

Repairs portable-household-electrical appliances, such as vacuum cleaners, toasters and heaters, rejected by production line inspectors or returned by user to manufacturer:

Refers to inspectors or user's report to locate defect or malfunction. Disassembles appliances, such as vacuum cleaners or toasters, to gain access to defective part or mechanism, using hand tools. Installs new parts, such as motor brushes, heating elements and switches, according to production specifications, using hand tools and soldering equipment. Reassembles appliance, switches it on, manipulates controls and observes and listens to detect faulty operation, and makes corrective adjustments. Records details of repairs made. Maintains stock of frequently used repair parts.

8533-214 ELECTRICAL REPAIRMAN HELPER(electric equip.) DPT:684
GED: 3 SVP: 3 EC: I 6 PA: M 2 3 4 7

Helps to install, maintain and repair electrical equipment, such as lighting fixtures, electric motors and wiring, in a commercial, industrial or other establishment:

Repairs conduit used in electrical wiring, by measuring, cutting, bending and threading, using tape measure, pipe cutter, hickey and pipe threader. Performs minor repairs, such as replacing bulbs, fuses and switches. Obtains replacement items, such as relays, circuit breakers and lubricants from stock room. Disassembles, cleans, and reassembles electrical equipment such as motors and relays, using hand tools and cleaning solvents. Assists in equipment installation by moving and positioning motors, gear boxes and controls, using hoists, dollies and other material-handling equipment. See also definition for term title, 02-160 HELPER (any ind.).

8533-218 ELECTRICIAN HELPER, AUTOMOTIVE (motor vehicle) DPT:684
GED: 3 SVP: 3 EC: I PA: L 3 4

Helps repair and overhaul automotive-electrical equipment in vehicles, such as automobiles, buses and trucks:

Disassembles components, such as heaters and generators, using hand tools. Removes and replaces defective items, such as motor and generator brushes, sealed-beam headlamps and battery cables, using hand tools. Washes parts, using solvent and brush. Obtains replacement parts from stock room. Prepares generators for overhaul by moving them to repair shop, using mechanical hoist or handtruck, and by cleaning and disassembling item. See also definition for term title, 02-160 HELPER (any ind.).

8533-222 DOMESTIC-AIR-CONDITIONER-REPAIRMAN HELPER (electric equip.) DPT:687
GED: 2 SVP: 3 EC: B 6 PA: H 2 3 4

Helps to repair, service and install domestic window-mounted air-conditioning units:

Helps workers to move new air-conditioners from delivery trucks to customer's premises, or to pick up unserviceable units at customers' homes. Dismantles unserviceable units by removing air deflector front and side panels, to enable mechanics to service equipment. Reassembles and helps to reinstall repaired or new air conditioners on customer's premises. Installs mounting brackets or other supports on outside wall of house, using hand tools and power tools. Withdraws panels from front vertical surfaces of units, and secures panels to vertical surfaces of window frame to fill in space between body of machine and window frame. See also definition for term title, 02-160 HELPER (any ind.).

8533-226 ELECTRIC-TRUCK SERVICEMAN(electric equip.) DPT:687
GED: 2 SVP: 3 EC: B PA: H 3 4 7

Serves battery-operated vehicles, such as electric trucks, used to transport materials in plants, and battery-operated golf carts:

Cleans and adjusts speed control mechanism, using cleaning solvent and hand tools. Lubricates moving parts, using grease gun and oil can. Removes discharged batteries from electric trucks or golf carts, manually, or using hoist. Cleans battery posts, using soda- water solution and cleaning tool. Connects batteries in series with charger, and unscrews vent caps. Switches on charger and adjusts charging current to specified rate. Tests batteries, using hydrometer, and disconnects and removes charged batteries. Installs charged batteries in trucks and carts.

May service a particular type of conveyance and be designated accordingly, Electric-Golf-Cart Repairman

8533-230 ELECTRIC-MOTOR-REPAIRMAN HELPER (electric equip.) DPT:687
GED: 2 SVP: 3 EC: I 6 PA: M 4 7

Helps mechanic to repair electric motors and related equipment: Prepares motors for repair by removing coils from armatures and stators, cleaning mechanical parts of motors, such as shafts, gears and

housings, and by removing brushes, bushings, armatures and windings, using blowtorch, hacksaw, wirecutter, cleaning solvent and hand and power tools. Straightens armature shafts, using jig, straightening bar, or wood block and hammer. Prepares surfaces of motor and starter housings for painting by removing old paint, using sanding equipment and cleaning solvents. Performs reassembly operations by replacing new parts, such as bearings and brushes, and by positioning and securing mounting hardware. See also definition for term title, 02-160 HELPER (any ind.).

8533-234 REFRIGERATION-MECHANIC HELPER (mech. equip., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: I 6 7 PA: M 2 3 4

Helps refrigeration mechanic to install, maintain, and repair industrial and commercial refrigerating and cooling systems:

Lifts or holds parts while mechanic fits, aligns, and fastens them into position. Bolts or unbolts parts, using hand tools. Cuts and threads pipe to specified lengths, using pipe cutter and pipe threader. See also definition for term title, 02-160 HELPER (any ind.).

8534-ELECTRONIC EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS

This unit group includes occupations concerned with fabricating and assembling electronic equipment; such as, radio and television transmitters and receivers and other communications equipment, sound recording and reproduction equipment, radar equipment, analyzing and computing equipment; electron tubes, resistors, semiconducting devices, capacitors, printed circuitry, and other electronic components. Activities include: mounting; securing; and interconnecting and adjusting parts and assemblies, using a variety of common or specialized hand and power tools, jigs and equipment. **ELECTRICAL EQUIPMENT FABRICATING AND ASSEMBLING OCCUPATIONS** are classified in Unit Group 8531.

8534-110 SET-UP MAN, CATHODE-RAY-TUBE PROCESSING (electronic equip.) DPT:280
GED: 4 SVP: 6 EC: I 5 6 7 PA: M 3 4 5 7

Sets up and maintains cathode-ray-tube processing apparatus, such as tube-exhaust chambers and bulb-coating and bulb-aluminizing equipment, performing any combination of following duties:

Sets controls of bulb-coating equipment to regulate flow of chemicals used to form fluorescent screen. Adjusts height of head on exhaust or aluminizing equipment, using height gauge and magnifying glass. Sets timer to regulate speed of dolly, carrying picture tube through aluminizing and exhaust equipment, according to tube size. Adjusts controls to set specified voltage, air pressure, rates of flow and temperature of exhaust and aluminizing equipment. Observes processing equipment to detect malfunctions. Disassembles, and repairs or replaces defective components, such as motors, switches and shafts, using hand tools. Tests vacuum and diffusion pumps, using vacuum and ionization gauges. Replaces or repairs defective vacuum and water pumps and associated equipment. Mixes tube-coating solutions. Charges bulb-washing and-coating machines with prepared solutions. Cleans and lubricates equipment. Records equipment failures and repair work performed.

May be designated according to type of equipment maintained; for example, Aluminizing-Equipment Maintenance Man

8534-114 SET-UP MAN, EXHAUST EQUIPMENT(electronic equip.) DPT:280
GED: 4 SVP: 6 EC: I 6 PA: L 3 4 7

Sets up and adjusts exhaust equipment used to remove gas and impurities from electron tubes:

Actuates controls to switch on power supplies, pumps and ovens, regulates oven temperature and to achieve specified degree of vacuum required. Observes gauges and meters used to measure temperature

and vacuum, and adjusts controls to ensure correct operating conditions. Monitors machine operation and examines improperly processed electron tubes to detect equipment malfunctions. Locates faults, using mechanical and electrical test equipment. Repairs or replaces defective parts, using hand tools. Notifies maintenance department of equipment requiring major repairs. May fabricate mechanical parts, using machine tools, such as lathe, drill press and bench grinder.

8534-118 ALIGNER, RADIO AND TELEVISION RECEIVER(electronic equip.) DPT:684
GED: 3 SVP: 5 EC: I 6 PA: L 4 6 7

Adjusts tuned circuits of newly manufactured radio and television receivers to obtain specified performance: Connects electronic-test equipment, such as signal generator and oscilloscope, to receiver. Adjusts tuned circuits of broadcast, frequency modulation and television receivers for specified performance, using alignment tools. Adjusts television tuned circuits for optimum receiver performance on each channel. Writes reject tag containing pertinent information, when unable to carry out alignment. May rectify minor faults by resoldering connections or replacing tubes.

8534-122 ASSEMBLER, ELECTRONIC EQUIPMENT(electronic equip.) DPT:684
GED: 3 SVP: 5 EC: I PA: L 3 4 7

Assembles electronic equipment, such as communications transmitters, radar equipment and telemetering systems: Mounts component, such as transformers, modules, milliameters, switches and inductors, in cabinets and on chassis or panels. Installs assembled terminal boards in chassis or on panels. Positions wiring harnesses in cabinets, panels and chassis, according to manufacturing standards, and secures them in place, using insulated clamps and hand tools. Attaches leads at cable-assembly break-out points to switches, terminal boards, transformers and connectors, using soldering equipment, spot welder and crimping devices, and following production drawings. Mounts panel assemblies to cabinet or rack, using hand and power tools. Secures plugs of cable assemblies to mating receptacles on panel, chassis or cabinet. Checks continuity of circuits, following drawings and using electrical-test equipment. Replaces defective components, resolders connections, and makes other changes, such as rerouting wires, following inspection reports. May be designated according to type of equipment assembled; for example, Communications-Transmitter Assembler Radar-Receiver Assembler

8534-126 ADJUSTER, FILAMENT-WINDING MACHINE(mech. equip., n.e.c.) DPT:380
GED: 3 SVP: 4 EC: I PA: L 4 7

Sets up and maintains battery of winding machines that form filaments used in electron tubes: Installs specified blades, cutters, gears, carriage cam, and guides in winding machine, using hand tools. Places spool of wire on feed spindle, threads wire around tension pulleys, and inserts it through guide. Sets tension gauge and opens air valve. Starts machine and depresses pedal to form sample filament. Verifies dimensions of filament, using millimeter scale and micrometer. Adjusts machine parts to wind filament to specified standards. Replaces defective machine parts, such as pulleys, rollers, and shafts, using hand tools. Sharpens cutting blades on bench grinder. Keeps record of repairs. May adjust pedal, according to operator's specifications, by varying length of chain or adjusting fulcrum. May fabricate machine parts, as required, using lathe, drill press and grinder.

8534-130 CARBON-RESISTOR-PROCESSING-EQUIPMENT OPERATOR(electronic equip.) DPT:382
GED: 3 SVP: 4 EC: I PA: L 4 7

Operates automated-production equipment to produce deposited-carbon-precision resistors: Loads machine with ceramic-resistor cores and resistor lead-wires. Turns valves to admit methane and nitrogen gases into carbon-coating furnace, and sets furnace temperature, according to work order. Actuates controls and valves to start vacuum pump of terminating chamber, to admit argon gas and to deposit gold to form contact

surface on resistor cores. Adjusts temperature of encapsulating oven to specified temperature. Observes temperature and pressure gauges and machine operation to detect equipment failures.

8534-134 ASSEMBLER, ELECTRONIC ORGAN(electronic equip.) DPT:684
GED: 3 SVP: 4 EC: I PA: L 4 7

Assembles components of electronic organs, such as amplifier chassis, speakers and tone generators, and installs interconnecting wiring and cable assemblies, performing any combination of the following duties: Fabricates specified cable assemblies, using insulated wire and peg boards, and ties wires together, using nylon lacing cord. Positions and attaches cable assemblies to organ structures, using nylon clamps and following production drawings. Mounts components, such as speakers, keyboard, switches and indicator lights, in specified sequence, using mounting hardware and hand and power tools. Connects coded wires from cable assembly and other leads to components as specified in assembly drawings, and secures leads, using crimping tool or soldering equipment. Positions and installs mechanical items, such as pedals, stop-boards and felt strips, following production drawings. Attaches insulating material, such as heavy felt or rock wool, to inside surfaces of speaker enclosures, using stapling gun. Mounts and fastens decorative grill cloth over speaker openings, using stapling gun. Positions decorative frame over grill cloth, using fastening devices. Tests electrical circuitry and manipulates keys and buttons to ensure conformance to specifications. May assemble specific components of electronic organ and be designated accordingly; for example, Console Assembler Keyboard-Action Assembler Stopboard Assembler Tone-Cabinet Assembler

8534-138 CRYSTAL-DICING-SAW OPERATOR(electronic equip.) DPT:682
GED: 3 SVP: 3 EC: I PA: L 4 7

Operates dicing saw (single or multiple-blade circular saw) to cut crystalline material, such as quartz, germanium and silicon, into wafers, blanks or dice, used in crystal oscillators and semiconducting devices: Mounts crystalline material on jig plate, using melted wax. Secures plate to carriage of machine by tightening thumbscrews. Turns handwheel to align blade with cutting lines on crystal. Sets automatic-feed controls according to specifications. Starts machine and observes automatic feed or pulls handle to move blade through crystal to form wafers. Turns jig and repeats sawing to form dice. Removes plate from machine and taps with light hammer to separate parts from plate.

8534-142 AGER, ELECTRON TUBE(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: I PA: L 4 7

Ages electron tubes to stabilize their electrical characteristics: Inserts electron tubes in sockets of ageing device and connects anode or control-grid lead to top cap of tube. Sets switches and controls for tube to be aged, following specified performance information. Switches on ageing device to connect operating voltages to tube elements, and allows tubes to operate for specified ageing time. Actuates controls and reads meters and indicators to determine operating characteristics, such as emission, and defects, such as interelectrode shorts, filament fracture, internal arcing or incomplete vacuum.

8534-146 ASSEMBLER, ANTENNA(electronic equip.) DPT:684
GED: 2 SVP: 4 EC: I 5 PA: L 4

Assembles television antennas and antennas for use on frequency modulation broadcast band: Places antenna boom (main support structure) in holding jig. Drills holes in boom to support hardware, using multispindle drill press. Attaches antenna elements and hardware at specified locations along boom, using hand tools and power tools. Fits transmission line terminal block to matching antenna section. Tends anodizing tanks to anodize antenna, to provide protective finish. May tend machine to mould insulators used for transmission line terminal block.

8534-150 ASSEMBLER, CHASSIS(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Assembles chassis of electronic equipment, such as radio and television receivers, audio amplifiers and transceivers, performing any combination of the following duties:

Bolts and rivets parts, such as tube sockets, transformers and terminal strips, to chassis, following production drawings and using hand tools, rivet gun and power wrench. Mounts items, such as potentiometers and rotary switches, using hand and power tools. Inserts ends of precut, coloured, and tinned wires into terminals of mounted parts, secures wires and solders to terminals to interconnect components. Mounts parts, such as resistors, capacitors and semiconducting devices on surface of printed-circuit board by inserting wire leads or contacts through holes in circuit board, and soldering wires to circuit board or chassis terminals. Inserts electron tubes in sockets.

May be designated according to type of chassis assembled or component installed on chassis; for example,
Assembler, Television Chassis
Transformer Mounter

8534-154 ASSEMBLER, CRYSTAL-UNIT(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Assembles frequency-determining-crystal-units:

Fits parts, such as crystal wafers, electrode plates and spacers in crystal holder, following production drawing and using hand tools. Fastens lead wires to crystal electrodes and secures leads to crystal holder pins, using soldering equipment. Places gasket over open side of holder and snaps cover in place, or secures cover, with screws or nuts and bolts. May place tinned-metal cover over open end of metal-crystal holder and solder cover in place to fabricate hermetically sealed unit.

8534-158 CHASSIS INSTALLER(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Installs television or radio chassis and associated parts, such as speakers and antennas, in cabinets, by performing any combination of following duties:

Cleans inside of cabinet, using air hose. Staples built-in antenna to inside of cabinet and mounts speaker assembly in cabinet, using hand tools and power tools. Assembles glass plate and picture-tube mask to front of television cabinet and cleans glass. Positions chassis in cabinet and tightens bolts with wrench. Plugs speaker connector into chassis or attaches leads to speaker, using soldering equipment. Attaches leads from built-in antenna to antenna terminals. Mounts dials and knobs on front panel control shafts. Attaches cover to back of cabinet, using power screw driver.

8534-162 CONVEYOR-LINE WORKER, PICTURE-TUBE ASSEMBLY(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: 1 4 5 PA: M 4 7

Carries out process and assembly operations manufacture of television picture tubes:

Fills funnel-shaped bulb of picture tube with distilled water and acetate solution and adds specified chemicals which settle to form picture-tube screen. Places bulb on shaking device to dislodge loose particles from screen area. Sprays or brushes specified interior surfaces of bulb with aquadag (conductive coating), and tests conductivity of aquadag, using test jig. Cleans bulb exterior and interior surfaces, using acid solution, water hose and felt or cork wheel, and particle-sanding machine. Places aluminum pellet into coil of aluminizing dolly and actuates controls to start vacuum vaporization process that deposits aluminum coating on bulb screen. Positions jig on tube base, threads lead wires through base pins and cuts off excess wire. Applies flux to base pins and immerses tube base in molten-solder pot to solder leads to base pins.

May be designated according to specific duties performed; for example,

Aluminizer, Picture-Tube Screen
Bulb Coater, Picture Tube
Fluorescent-Screen Former
Screen Buffer, Picture Tube
Tube-Base Mounter

8534-166 CRYSTAL CALIBRATOR(electronic equip.) DPT:684
crystal lapper.
GED: 3 SVP: 3 EC: 1 PA: S 4 6 7

Monitors electronic test equipment to determine oscillating frequency of crystal in crystal-lapping machine:

Inserts crystal into electrical holder of crystal-lapping machine and connects leads from holder to radio-frequency oscillator. Switches on precision crystal oscillator to provide heat frequency with oscillator connected to crystal. Starts machine and applies crystal-grinding compound to crystal surfaces. Monitors heat frequency output, as crystal polishing progresses, using headphones, to detect continuously decreasing audio frequency. Stops crystal lapping-machine when signal indicates crystal has been reduced to specified size. Removes crystal, rinses in water and dries it in centrifugal drier. Inserts crystal into holder, plugs crystal unit into oscillator, connects leads from oscillator to frequency counter and observes reading to determine crystal frequency.

8534-170 ETCHER AND PLATER, QUARTZ CRYSTAL(electronic equip.) DPT:684
crystal finisher.
GED: 3 SVP: 3 EC: 1 PA: S 4 6 7

Etches or plates quartz crystals to raise or lower their oscillating frequencies:

Dips crystals in cleaning and rinsing solutions, using tweezers or handling jig, and dries crystals, using centrifugal drier. Checks oscillating frequency of crystal, using electronic-test equipment. Places crystal in jig and immerses jig in plating solution to increase crystal size, or immerses crystal in etching solution to reduce its size. Removes crystal from solution after specified time, rechecks frequency and repeats operation as required. Checks frequency of finished crystal, using precision electronic-test equipment. Makes small change to crystal frequency when required, using vacuum- evaporation equipment.

8534-174 ASSEMBLER, CAPACITOR(electronic equip.) DPT:685
GED: 3 SVP: 3 EC: 1 6 PA: L 4 7

Assembles paper, electrolytic, tantalum and other types of capacitors used in electronic equipment, by any of the following methods:

1. Tends capacitor machine that winds specific lengths and types of foil paper to form capacitor core of specified capacity. Solders lead wires to core ends, using soldering equipment. Places core-lead assemblies and paper cylinder or plastic cases into machine that places case over core-lead assembly and fills and seals ends with plastic compound, to form tubular capacitors. Lowers tray of capacitors into molten plastic, to apply protective coating. 2. Tends equipment to wind cores for electrolytic capacitors and impregnate cores with paste electrolyte. Attaches leads to core, places core in cylindrical aluminum can, attaches leads to terminal assembly and secures bottom cap, using spinning machine. Connects electrolytic capacitors to direct-current supply voltage and actuates controls to supply specified voltages for specified times, to electrically form a film on one foil surface. 3. Feeds capacitor components, such as lead wires, metal or plastic cases and cores, into machines that assemble, seal and mark or colour code capacitors. 4. Mixes powdered tantalum with other chemicals and fills machine- press hoppers with mix and tantalum-coated leads. Actuates controls of press to form and compress mix into specified shape and insert lead to form capacitor anode. Tends equipment to coat anode with manganese dioxide to form cathode element and deposit graphite film over element to provide a conductive surface. Actuates machine controls to insert core in metal capacitor case, attach leads, and print identifying data on case.

May rework rejected paper capacitor cores to lower capacity by unwinding foil paper. May be designated according to type of capacitor assembled; for example,
Mica-Capacitor Assembler
Paper-Capacitor Assembler

8534-178 PLATER, VACUUM-EVAPORATION PROCESS(electronic equip.) DPT:685
GED: 3 SVP: 3 EC: 1 PA: L 4 6 7

Tends vacuum-evaporation equipment that deposits metallic film on parts, such as quartz and silicon crystals, used in manufacture of electronic components:

Places parts, such as quartz, silicon or germanium wafers, on fixture, using tweezers or vacuum probe, and places fixture in vacuum chamber. Places aluminum or nickel wire, as specified by production order, into crucible of heating device. Clamps lid on chamber and starts electric pump that creates partial vacuum in chamber. Sets controls to regulate electric current that energizes heating device and vaporizes metal. Observes gauges and readjusts controls to ensure that specified heat is maintained. Turns off equipment after specified time. Checks for correct plating of quartz crystal units, using frequency-measuring equipment.

8534-182 ASSEMBLER, PRINTED CIRCUIT(electronic equip.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Installs electronic components, such as transistors, diodes, tube sockets, resistors and capacitors, on printed-circuit boards, used in radio and television receivers, hearing aids, amplifiers and other electronic equipment:

Prepares component leads for assembly by dipping or brushing, using cleaning solvent. Places circuit board in holding fixture and inserts stripped and tinned wire, component leads, terminals and mounting tabs through holes in circuit board, following production drawings and using tweezers and hand tools. Positions miniature parts, using microscope. Bends leads on underside of boards to secure components in position for soldering. Attaches parts, such as transformers and connectors, to circuit board, using miniature welding machine, or soldering equipment, and places associated leads through specified holes in board to complete electrical circuit.

8534-186 ASSEMBLER, RECORD CHANGER(electronic equip.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles record changers, using hand tools and soldering equipment:

Positions changer frame structure in jig, and fits and secures parts in place in specified sequence, using hand tools. Installs motor, and attaches and solders leads to terminal tie points, using hand tools and soldering equipment. Connects lugs to pick-up leads and attaches leads to tie point. Inserts turntable mounting-springs, control knobs, and installs felt or rubber turntable mat, using hand tools and cement.

8534-190 ASSEMBLER, SPEAKER(electronic equip.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: S 4 6

Assembles loud speakers used in audio equipment, radios and television sets, by performing any combination of the following duties:

Folds precut composition-paper sheets and glues edges to form speaker cone. Fastens flexible lead wires to speaker voice-coils, using soldering equipment. Cements voice coils to speaker cones. Secures speaker frame to magnetic housing, using staking press. Inserts cone and voice-coil assembly over cylindrical pole in speaker housing and inserts centering device between inner surface of voice coil and pole. Secures voice-coil leads to speaker terminals, using soldering equipment. Cements outer rim of cone and voice-coil assembly to speaker frame and cements felt or paper composition gasket over outer edge of cone. Connects oscillator to speaker terminals, varies frequency and listens to speaker response to detect defects, such as cone rattle or distortion due to off-center voice coil. Labels speakers to indicate defect and segregates defective speakers.

May perform specific duties and be designated accordingly; for example,
Cone Assembler
Voice-Coil Assembler

8534-194 ASSEMBLER, ELECTRON TUBE(electronic equip.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Assembles electron tubes, performing any combination of following duties:

Tends equipment that coats cathodes with conductive materials and examines cathodes under microscope to ensure adequate coating. Tends machine that winds wire to form tube filaments. Places filaments in cathode sleeves, using tweezers, or positions straight filament wire around ceramic supports of glass stems. Tends winding, shaping and cutting machines that wind fine wire into specified configuration around supports to form control grid of tube. Verifies correct spacing and dimensions of wound wire, using calibrated microscope. Punches hole in top of tube bulb, for tubes employing top plate or grid cap, using self-indexing punching machine. Feeds tube bulbs into machine that stencils tube type and other data on bulbs. Positions component parts, such as anodes, grids, plates, stem and leads in mica support disk. Secures leads to tube elements, using tweezers, and welds leads to ensure good electrical connection, using resistance-spot welder. Examines assembly to detect misalignment of components and defective welding. Positions assembly in tube bulb. May be designated according to specific duties performed; for example,
Bulb-Mount Assembler
Cathode Coater
Filament Insertor

8534-198 SEALING-MACHINE TENDER(electronic equip.) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 4

Tends equipment that seals electron guns into bulbs to form television picture tubes:

Places electron gun in heating device and adjusts controls to set specified gun temperature. Positions heated gun on sealing machine spindle and places bulb over spindle. Secures bulb to gun, by tightening neck-aligning clamp. Starts machine that indexes gun- bulb assembly through processing stations to seal gun assembly to bulb. Monitors process and adjusts controls to obtain seal. Places sealed unit on conveyor for further processing. Marks identifying data on sealed unit.

8534-202 EXHAUST-AND-SEALING-MACHINE TENDER(electronic equip.) DPT:685
GED: 2 SVP: 2 EC: 1 6 PA: S 4 7

Tends machine that automatically exhausts air from electron tubes and seals exhaust ports of tubes:

Positions tubes in multiple-head sealing machine. Starts machine equipped with heating, cooling and bombarding chamber that automatically evacuates gas and impurities from tube, seals tube, and pinches off excess glass. Examines tubes to detect poor sealing. Observes tubes for bluish glow, indicating gassy tube, as they are carried by conveyor through testing device. Segregates defective tubes.

8534-206 ASSEMBLER, COLOUR-PICTURE-TUBE(electronic equip.) DPT:684
GED: 2 SVP: 2 EC: 1 7 PA: M 4 7

Assembles colour-picture-tubes, performing any combination of following duties:

Places top-cap (picture-tube screen) on conveyor that carries it through cleaning, drying and phosphor-coating operations. Positions aperture mask and top-cap in fixture of time-cycled light source and starts cycle to expose top-cap coating to light through aperture mask to form colour-emitting dots on phosphor coating. Marks mating top-cap and aperture mask with identifying numbers. Coats neck of glass funnel with nonconductive chemical solution. Positions glass funnel of picture tube on turntable and moves controls to seal edge- ring around funnel mouth and spray interior of funnel with conductive coating. Cleans seal-edge-ring with solvent and actuates control to coat seal-edge-ring with specified amount of frit (bonding cement). Places funnel in jig and removes foreign matter from screen, using airhose. Positions top-cap and aperture assembly on coated funnel rim, aligns top-cap with reference marks on funnel and moves funnel into glass sealing and annealing oven to fuse top-cap to screen. May specialize in a particular aspect of assembly and be designated accordingly; for example,

Frit Dispenser
Funnel Coater
Top-Cap Sensitizer

8534-210 ASSEMBLER, FILTER(electronic equip.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Assembles radio-frequency-interference filters, following production drawings and using hand tools and soldering equipment: Positions cathode assemblies of colour picture tube on each of three mandrels, using tweezers, and places mandrels in holding fixture. Places and aligns beam shields, and aligns connecting straps on cathode assemblies, using aligning jig, to position cathodes in specified alignment with each other. Welds straps to cathode structure, using spot welder. Places glass bead in each arm of three-arm heating device and actuates controls to heat beads. Positions cathode assemblies in beading device and actuates controls to raise arms and attach beads to cathode assemblies. Welds connecting leads to colour or black-and-white picture-tube-elements, such as grids, cathodes and anodes, using precision holding and positioning jig. Fits connecting leads through hollow pins of tube base, applies flux, and solders tube base, using solder pot.

8534-214 ASSEMBLER, PICTURE-TUBE GUN(electronic equip.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Assembles guns (electron emitters) used in colour and black and white picture tubes: Positions cathode assemblies of colour picture tube on each of three mandrels, using tweezers, and places mandrels in holding fixture. Places and aligns beam shields, and aligns connecting straps on cathode assemblies, using aligning jig, to position cathodes in specified alignment with each other. Welds straps to cathode structure, using spot welder. Places glass bead in each arm of three-arm heating device and actuates controls to heat beads. Positions cathode assemblies in beading device and actuates controls to raise arms and attach beads to cathode assemblies. Welds connecting leads to colour or black-and-white picture-tube-elements, such as grids, cathodes and anodes, using precision holding and positioning jig. Fits connecting leads through hollow pins of tube base, applies flux, and solders tube base, using solder pot.

8534-218 ASSEMBLER, POTENTIOMETER(electronic equip.) DPT:684
assembler, variable resistor.
GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles wire-wound or carbon-composition potentiometers, by performing any combination of the following duties: Removes specified length and gauge of resistance wire from spool, required to fabricate wire-wound resistance element. Moves tester prod along wire until specified resistance is observed, and cuts wire, using wire cutter. Places resistance wire into forming device that forms it over circular strip of insulating material, and applies heat to mould wire into insulating material to form resistance element. Positions element into housing of wire-wound potentiometer, or positions prefabricated carbon-composition element into housing of carbon potentiometer. Secures element in body of potentiometer, by cementing, rivetting or crimping, using contact cement, rivetting machine or crimping jig. Mounts bushing into body of potentiometer, and secures in position, using press. Installs shaft mechanism through bushing and secures in position, using locking ring. Attaches wire ends of element to contact points, using spot welder. Places cover in position and secures tabs, using jig. May attach additional components to fabricate ganged-potentiometer, using single shaft or concentric shafts.

8534-222 ASSEMBLER, SEMICONDUCTOR(electronic equip.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Assembles semiconductor devices, such as diodes and transistors, by performing any combination of the following duties: Stacks alternate layers of semiconductor wafers, solder chips and nickel disks in holes in graphite boat, using tweezers and vacuum-pick-up tool. Places cover on boat and positions lead wires through holes in cover and onto wafers. Places boat in furnace, to melt solder and bond assembly together. Removes boat from furnace and replaces assemblies in holes in graphite boat, using tweezers. Fits cover on boat and inserts elements into holes in cover. Places boat in tunnel oven that fuses semiconductor assembly and elements together to form junctions on semiconductor material. Removes fused parts from oven and examines for defective fusion. Tests forward conductivity of fused assembly, using electronic-test equipment. Places leads of diode

in holding fixture of fusing machine and positions semiconductor wafer on leads, using tweezers and microscope. Moves machine controls to electrically fuse parts together. Removes parts and places them in fixture for cooling. Positions pieces of precut wire on transistor headers to form transistor leads. Fastens one end of lead to header terminal pins, using spot welder, and bends other end of lead to specified points on surface of semiconductor material, using needle. Positions header under stylus of lead-bonding device and pushes lever to bond leads to semiconductor material.

May tend equipment that automatically welds, bonds, crimps and fuses parts into finished semiconductor devices. May test semiconductor devices, using electronic-test equipment. May perform a specific part of the assembly process and be designated accordingly; for example, Lead-Welder
Semiconductor Mounter

8534-226 ETCHER, PRINTED-CIRCUIT BOARD(electronic equip.) DPT:684
GED: 2 SVP: 2 EC: 1 6 7 PA: L 4 7

Etches conductive patterns on copper-faced plastic sheet to form printed-circuit boards for electronic equipment, using one of following methods:

1. — Fits silk screen, containing circuit pattern in frame, positions blank copper-faced circuit board in holding fixture and lowers silk screen over circuit board blank. Applies resist-ink to silk screen, using brush and rubber wiper blade and places in rack to dry. Adjusts quantity of acid in immersion tank and starts agitators. Lowers rack filled with circuit boards into tank and removes after specified period.
2. — Places rack in rinsing solution, and removes and stacks etched boards to dry. Places silk-screened boards on etching machine conveyor. Sets controls according to thickness of copper coating. Starts machine to spray silk screened boards with acid to form circuit pattern. Removes boards from machine, immerses in rinsing solution and removes and places in rack to dry. Visually inspects boards for open or short circuits.

May sensitize blank-circuit board to light, by coating board with light sensitive enamel, and transfer circuit pattern to board, using circuit negative and arc light.

8534-230 LAMINATOR, TELEVISION-PICTURE-TUBE(electronic equip.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Laminates safety glass to face of picture tube: Cleans surfaces of picture tube and safety glass, using solvent and soft cloth. Places tube and safety glass in conveyor jig and inserts separating wire between tube face and safety glass. Places adhesive tape around tube face to provide sealed space between tube face and safety glass. Starts conveyor to carry picture tube past bank of lamps in heating oven. Breaks small opening in tape, inserts nozzle or resin dispenser into opening and applies specified quantity of clear resin to tube face and safety glass surfaces. Removes picture tube from conveyor and removes separating wire. Applies blue barrier lacquer to tube anode, using spray nozzle. Examines laminated tubes for defects, such as streaks and stains. Cleans tube and safety glass surfaces, using solvent, and refinishes surfaces, using pumice. Delaminates tubes which require rework.

8534-234 STEM BEADER, ELECTRON TUBE(electronic equip.) DPT:684
flare beader.
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Fuses glass-beaded wire into stems of electron tubes: Assembles wires and glass beads to form beaded wire, using jig and tweezers. Holds glass stem of tube near flame of gas torch to soften glass and draws beaded wire through stem opening and into stem so that beaded wire is fused to stem. Checks outside diameter of assembly, using ring gauge.

8534-238 ASSEMBLER, TAPE CARTRIDGE AND CASSETTE(electronic equip.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: S 4

Assembles cartridges or cassettes used in tape recorders or players: Places reel of tape on feed spindle of tape-winding machine and places cartridge spool or cassette on take-up spindle of machine.

Threads end of tape from reel through guides and cutting mechanism of machine. Attaches end of tape to cartridge spool, or splices end of tape to leader tape on cassette. Activates machine that winds tape from reel onto cartridge spool or cassette and automatically cuts tape at end of process. Removes loaded cartridge spool or cassette from machine. Splices ends of tape together to complete cassette assembly. Places loaded cartridge spool over spindle on cartridge base. Splices end of tape, using adhesive sensing, to form continuous loop, and positions tape around guides. Fits top of cartridge onto base to complete cartridge assembly.

8534-242 COLOUR CODER, COMPONENT(electronic equip.)
DPT:685
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Tends machine that prints colour codes on electronic components, such as capacitors, diodes and resistors:
Fills reservoirs of machines with specified ink. Loads components into feed mechanism of machine. Starts machine, and observes operation to detect jamming and to detect defective printing. Removes coded components from discharge tray. Cleans ink rollers after completion of run, using cloth and solvent. Notifies maintenance personnel of equipment malfunction.

8534-246 COMPONENT-INSERTING-MACHINE TENDER(electronic equip.)
DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that positions electronic components, such as resistors, capacitors and diodes, on printed-circuit boards:
Loads components, such as resistors, into feeding mechanism of machine. Positions printed-circuit board on bed of machine under inserting tool. Pushes pedal to lower tool that bends component lead-wires and inserts lead-wires into holes in board. Places completed board on conveyor.

8534-250 COMPONENT-LEAD FORMER(electronic equip.)
DPT:685
GED: 2 SVP: 2 EC: 1 PA: S 4

Tends machines that cut and shape wire leads on components, such as capacitors, diodes and transistors, to facilitate their mounting on printed circuit boards:
Installs dies in machine according to specified shape and length of lead, using hand tools. Starts machine, and feeds components into machine, or inserts jig on which components have been mounted, into automatic machine-feed mechanism. Removes components from discharge tray after leads have been formed.

8534-254 DIP-SOLDERING-MACHINE TENDER(electronic equip.)
DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Operates dip-soldering machine to solder components on printed-circuit boards:
Secures upper side of printed-circuit board against foam-rubber backing of holding fixture to prevent movement of parts. Places and secures fixture in lead-cutting machine and actuates controls of machine to cut excess lead wire from lower side of printed board. Positions fixture with printed board on flux machine and actuates control to deposit soldering flux on component leads and printed-circuit board conducting surfaces. Positions board in soldering machine and actuates controls to lower panel into liquid solder for specified time to solder leads to board conducting surfaces and withdraw excess solder. Waxes surface of element used to withdraw excess solder, removes dross from surface of molten solder and replenishes flux supply.

8534-258 RIM BANDER, TELEVISION-PICTURE TUBE
(electronic equip.) DPT:685
GED: 2 SVP: 2 EC: 1 6 PA: L 4

Tends machine to fit and secure anti-implosion bands to picture tubes:
Pours adhesive cement into dispenser of banding machine. Installs reel of steel-banding tape on machine and threads tape over rollers and onto tape-clamping device. Positions and locks picture tube on banding machine. Actuates machine controls to place adhesive coated steel band in groove around periphery of tube, apply specified pressure

to tighten band, and cut and crimp band ends together. Examines tube to ensure that band is correctly positioned, and taps incorrectly positioned bands into place, using rubber mallet. Removes excess cement from tube, using solvent and cloth.

8534-262 MACHINE FEEDER, CARBON-COMPOSITION RESISTORS(electronic equip.)
DPT:686
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Feeds machines on automated production line that produce carbon-composition resistors:
Weighs resistor parts, such as cores, leads, and sleeves, following production order. Fills hoppers of machines with resistor parts, fills reservoirs with ink of specified colours, and places forming blocks on conveyor. Examines resistors on conveyor to detect burrs and illegible colour coding. Removes resistors from conveyor and places them in containers. Cleans machines, using compressed-air hose.

8535-ELECTRONIC AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with installing and repairing electronic equipment, such as radio and television broadcast transmitters; sound recording and reproduction equipment; radar equipment; and analyzing and computing equipment. Installing activities include: mounting; securing; interconnecting and adjusting assemblies and units, using hand and power tools. Repairing activities include: disassembling; fault-locating and diagnosis; replacing components; and reassembling equipment, using electronic-test equipment and hand tools. Wire communications installing and repairing occupations are classified in Unit Group 8735, WIRE COMMUNICATIONS AND RELATED EQUIPMENT INSTALLING AND REPAIRING OCCUPATIONS.

8535-110 INSTALLER, AIRCRAFT-ELECTRONIC-EQUIPMENT (electronic equip.)
DPT:281
GED: 4 SVP: 7 EC: 1 6 PA: M 3 4 7

Installs electronic equipment, such as communications, navigation and radar equipment, using hand tools, power tools and electronic test equipment:
Performs preliminary assembly work, such as attaching mounting plates to equipment and attaching flexible bonding wires, using hand tools and following drawings. Installs equipment, such as communications receivers, radar equipment and associated controls, in specified locations in aircraft. Slides equipment into aircraft mountings, secures fastening devices and plugs cable connectors into mating receptacles of equipment. Secures cables at specified locations, using aircraft-cable-clamps and hand tools. Attaches equipment bonding wires to specified terminals on airframe. Installs interconnecting cables between major units and remote controls and indicating devices, using cable clamps. Actuates switches to connect aircraft-power-supply to equipment and tests for specified voltage at junction box terminals and other locations, using volt-ohm-milliammeter. Corrects minor malfunctions by replacing fuses, indicator lamps and connector pins. Removes and tags unserviceable equipment.
May install electronic equipment in rocket propelled devices.

8535-114 REPAIRMAN, ELECTRONIC-EQUIPMENT
(electronic equip.) DPT:281
electronics mechanic.
GED: 4 SVP: 7 EC: 1 6 PA: L 4 7

Repairs electronic equipment, such as radar, communications, telemetering, data processing equipment and sound-reproducing equipment:
Examines and tests equipment, applying knowledge of functional operation and general electrical and electronic theory, following circuit diagrams and using electronic-test equipment. Tests electronic components and circuits to locate defects such as shorted capacitors or open circuit in transformer or choke-coil windings, and tests circuits to determine such factors as grid-bias voltage, waveform configurations

and radio-frequency output, using capacitor checker, vacuum-tube voltmeter and oscilloscope. Replaces defective components and wiring and adjusts mechanical parts, using soldering equipment and hand tools. Aligns, adjusts and calibrates equipment according to specification, following circuit diagrams and using alignment tools, hand tools and test equipment. Maintains records of repair work. May install equipment at user's establishment. May install modifications to update equipment. May be designated according to type of equipment repaired; for example,
Communications-Equipment Repairman
Electronic-Organ Repairman
Process-Control-Equipment Mechanic
Radar Mechanic

8535-118 INSTALLER AND REPAIRER, AUDIO-VISUAL EQUIPMENT(electronic equip.) DPT:261
GED: 4 SVP: 6 EC: I 6 PA: H 4 5 6 7

Installs and repairs audio-visual equipment, such as video and sound recorders and reproducers, slide and motion-picture projectors, and closed-circuit television sets, for use in educational institutions and commercial establishments:

Installs sound systems, such as intercommunication amplifiers and sound recorders and reproducers, following wiring diagrams and using hand and power tools. Installs components of closed-circuit television system, such as cameras, video amplifiers, recorders and receivers, following equipment-manual instructions. Installs motion-picture and slide projectors and phonograph equipment as specified by work order. Switches on components of individual installations, checks operation and makes adjustments to ensure optimum performance. Makes minor repairs on location, such as replacement of cable assemblies, electron tubes, and microphones. Transports unserviceable equipment to repair shop. Determines cause of malfunction, using electronic test equipment, and replaces defective components, such as transistors, diodes and capacitors, using hand tools and soldering equipment. Advises user on proper operation and care of equipment.

May specialize in installing or repairing a specific type of equipment and be designated accordingly; for example,
Closed-Circuit-Television Installer

8535-122 REPAIRMAN, RADIO-COMMUNICATIONS EQUIPMENT (electronic equip.) DPT:261
GED: 4 SVP: 6 EC: I 6 PA: L 4 6 7

Repairs radio transmitting and receiving equipment:

Examines equipment to detect visible defects, such as damaged components, loose or broken wires and poorly soldered connections, and makes repairs by soldering or tightening loose connections, and replacing damaged wiring. Locates faulty components, such as capacitors, electron tubes and transformers, using electronic test equipment. Plugs in replacement items or removes and replaces components, using hand tools and soldering equipment. Switches on transmitting equipment and checks output power, output frequency and modulation, following manufacturer's specifications and using test equipment. Tests receivers for such factors as sensitivity, dial calibration and audio quality, and corrects deficiencies by locating and replacing defective components and by realigning tuned stages. Examines and checks operation of related equipment, such as antennas, remote controls and auxiliary-power units, using test equipment, and effects repairs by replacing defective parts.

8535-126 REPAIRMAN, TELEVISION-STUDIO EQUIPMENT (electronic equip.) DPT:261
GED: 4 SVP: 6 EC: I 6 PA: L 4 6 7

Repairs and maintains television-studio electronic equipment, such as television cameras, telecine equipment, film-editing equipment, film viewers and video recorders, using hand and power tools and electronic-test equipment:

Analyzes reports and consults with operators of equipment, such as video recorders and television cameras to obtain details of equipment malfunction. Makes minor adjustments or replaces plug-in items, to correct malfunction, using hand tools and following manufacturer's manual. Removes panels, to gain access to equipment and removes chassis, using hand tools. Tests voltages and current at specified points, using vacuum-tube-voltmeter. Tests and replaces weak electron tubes. Connects oscilloscope to circuits and observes waveform patterns, to locate malfunction. Replaces assemblies and parts, such as

deflection yokes, horizontal-output transformers, diodes and capacitors, using hand tools and soldering equipment. Connects equipment to power source, switches on equipment and conducts operational check. Makes minor adjustments to ensure optimum performance. Records data, such as details of malfunction, equipment type and serial numbers and corrective action taken.

May perform similar duties as member of remote-telecast-crew. May specialize in repairing specific equipment and be designated accordingly; for example,
Telecine-Equipment Repairman
Television-Camera Repairman

8535-130 INSTALLER AND REPAIRER, PUBLIC-ADDRESS SYSTEM(electronic equip.) DPT:281
GED: 4 SVP: 6 EC: B PA: M 2 3 4 6 7

Installs and repairs audio-amplifying systems used at public gatherings:

Positions speakers and microphones for public-address system and runs connecting lines to audio amplifier. Switches on amplifier, adjusts audio output level and repositions speakers or microphones to avoid feedback. Investigates equipment failures and performs repairs on location, or in shop, using hand tools, soldering equipment and electronic test meters. Determines cause of malfunction, using electronic-test equipment, such as audio-signal generator, vacuum-tube voltmeter and oscilloscope, and replaces defective parts, such as capacitors, transformers and chokes, using hand tools and soldering equipment.

8535-134 REPAIRMAN, NUCLEONIC-CONTROLLER (electronic equip.) DPT:281
GED: 4 SVP: 6 EC: I 6 PA: L 4 7

Repairs and adjusts nucleonic equipment activated by radioactive source, used to control amount of tobacco fed into cigarette-making machines:

Examines functioning of tobacco-feeding device to ensure operation is within specified limits and to detect malfunction. Checks tobacco-feed controller, using portable test set and following equipment manual, to detect malfunction. Removes and disassembles controller and associated components, using hand tools. Examines components to detect loose connections, frayed wiring and signs of overheating. Tests tubes, and replaces defective ones. Interconnects various controller components, following equipment manual. Switches on equipment and observes waveforms on oscilloscope, to determine cause of malfunction. Replaces parts, such as capacitors, resistors and transistors, using soldering equipment and hand tools. Tests for specified radiation from radioactive source, using geiger counter. Reassembles controller and associated components, using hand tools. Records information concerning repairs made.

8535-138 REPAIRMAN AUTOMATED-PROCESSING EQUIPMENT (electronic equip.) DPT:281
GED: 4 SVP: 6 EC: I 6 PA: M 4 5 7

Repairs control cabinet assemblies of automated processing equipment used in industrial plants:

Removes side panels from cabinet. Slides out panel-mounted assemblies, and examines equipment to detect obvious defects, such as overheating of components, malfunctioning or inoperative relays and cracked or broken printed circuit boards. Cleans equipment, using air hose, solvent and rags or degreasing tank. Switches on equipment and test apparatus, following specified procedures. Actuates switches of test jig and observes waveforms and operating voltages of power supply, electron tubes and transistors. Replaces defective sub-assemblies and components, such as printed circuit boards, relays, tubes and capacitors, using hand tools and soldering equipment. Removes, tests, calibrates and adjusts sensing devices, such as pressure and temperature-activated controls. Prepares work orders for fabrication of mechanical parts, such as brackets, and for painting or welding. Observes test operation by quality-control personnel and makes final adjustments or replaces components.

8535-142 HEARING-AID REPAIRMAN(electronic equip.)
DPT:261
GED: 3 SVP: 6 EC: 1 PA: S 4 7

Repairs hearing aids, following schematic diagrams and using electronic-test equipment and hand tools:
Questions customer to assist in diagnosing nature of malfunction. Checks replaceable components, such as battery, microphone and earphone, using vacuum-tube-voltmeter or by substituting new components. Removes amplifier printed-circuit assembly from case and examines it to detect poorly soldered connections, shorts between foil strips or open circuits, using magnifying glass and vacuum-tube-voltmeter. Solders break in foil and removes solder causing short between foil strips, using soldering equipment. Replaces defective parts, such as capacitors, resistors and transformers, using hand tools and soldering equipment. Tests amplifier to ensure performance meets specifications, using audio-signal generator and output meter.

8535-146 PRODUCTION REPAIRMAN(electronic equip.)
DPT:281
GED: 3 SVP: 6 EC: 1 6 PA: M 4 7

Repairs radio transmitters, radar equipment, television and radio receivers, or other electronic equipment, rejected on production line:
Reads inspection tag and examines equipment to detect defects, such as poor solder joints, broken wires or defective components. Replaces wires, repairs solder connections and removes and replaces components, such as resistors, connectors and electron tubes, following drawings and using electronic-test equipment, hand tools and soldering equipment. Replaces scratched cabinets and damaged or missing trim.
May be designated according to type of equipment repaired; for example,
Audio-Amplifier Repairer, Production
Television Repairman, Production

8535-150 ANTENNA RIGGER(telecom.)
DPT:684
GED: 3 SVP: 5 EC: B 6 PA: M 2 4

Installs, inspects and maintains antennas and related equipment used for receiving and transmitting radio broadcasts and radio-communications on high frequency bands:
Installs masts, antennas, transmission lines, guy wires and anchors, working as member of crew. Inspects existing installations to detect broken transmission lines, spacers, and antenna and feed-through insulators. Lowers antenna, climbs tower, or works from bucket attached to aerial-lift-boom to effect repairs to broken transmission lines and to replace defective antenna or spreader-insulators, using hand tools. Fabricates open-wire transmission lines, by placing wire conductors on surface of ground and attaching and securing spacer insulators at specified intervals. Examines guy wires to ensure specified tension, using testing device and alters turnbuckle or other device to achieve correct tension. Climbs towers and replaces bulbs or broken globes on signal lights.

8535-154 RADIO-COMMUNICATIONS-EQUIPMENT-REPAIRMAN HELPER(electronic equip.)
DPT:684
GED: 3 SVP: 3 EC: B 6 PA: L 4 5 6 7

Helps repairman to repair radio-communications equipment:
Replaces defective parts of radio-receiving and transmitting equipment, such as capacitors, resistors and electron tubes, using hand tools and soldering equipment. Cleans cabinets and chassis, using air hose and vacuum cleaner. Cleans and lubricates motor generators and switch contacts, using cloth, solvent, and contact cleaner. Tightens connections, using screwdriver. See also definition for term title, 02-160 HELPER (any ind.).

8535-158 CALIBRATOR, WIRE-WOUND RESISTORS
(electronic equip.)
DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Reworks wire-wound resistors rejected by inspectors to attain a specified resistance value:
Connects test prods of ohmmeter to resistor and observes meter to determine variation in resistor wire required to attain specified resistance. Solders or welds additional wire to resistor wire or cuts piece from wire. Reconnects wire to resistor terminals. Verifies value of resistor, using ohmmeter.

**8536-INSPECTING AND TESTING OCCUPATIONS:
FABRICATING, ASSEMBLING, INSTALLING AND
REPAIRING, ELECTRICAL, ELECTRONIC AND
RELATED EQUIPMENT**

This unit group includes occupations in inspecting and testing work as described under term titles, 02-170 INSPECTOR (any ind.), and 02-430 TESTER (any ind.), concerned with quality-control activities in the fabrication, assembly, installation and repair of electrical and electronic equipment and components.

8536-110 TESTER, CONTROL-PANEL(electric. equip.;
electronic equip.)
DPT:281
GED: 4 SVP: 8 EC: 1 6 PA: L 4 6 7

Tests and inspects wired control panels and control cabinets for use in installations, such as heating, air conditioning and automated processing equipment, for conformance to specifications and quality of workmanship, using electrical and mechanical test equipment:
Verifies layout of panel or cabinet wiring and component placement, following engineering drawings, and makes examination to ensure terminals and mounting hardware are secure, that soldered connections meet specification, and that no components or parts are missing or incorrectly placed. Makes continuity tests, following drawing and using continuity tester. Checks circuit resistance at designated points, using ohmmeter. Connects unit to power source, and makes voltage and current checks, using test equipment. Actuates panel-mounted controls and ensures correct circuit operation as indicated by panel-mounted meters, and correct operation of relays and auxiliary components, such as cooling fan. Makes minor changes to correct deficiencies, using hand tools. Consults with engineering and production personnel on findings. Prepares itemized report to detail malfunctions and deficiencies.
May train workers. May inspect, test and repair installations on customers' premises.

**8536-114 ELECTRICAL INSPECTOR,
LOCOMOTIVE**(electric. equip.)
DPT:281
GED: 4 SVP: 7 EC: B PA: L 2 3 4 7

Inspects electrical equipment used in railway locomotives, using hand tools and electrical-and mechanical-test equipment:
Examines components, such as generators, motors and blowers, to determine wear and extent of repair required. Inspects repair work to ensure that it meets company standards. Conducts tests, such as motor speeds in revolutions per minute, on and off load voltages and current of motors and generators, and operation of starting and regulating devices, using mechanical-and electrical-test equipment. Investigates equipment failures, authorizes removal from service when indicated, and prepares reports.

8536-118 TESTER, MOTORS AND CONTROLS(electric.
equip.)
DPT:261
GED: 4 SVP: 7 EC: 1 6 PA: M 3 4 7

Tests performance of electric motors, generators, alternators and associated control and regulating devices, under simulated operating conditions, following specified procedures and using electrical-test equipment:
Positions motors, generators and associated components, such as switches, relay panels and test panels, and interconnects items to perform specific tests, using hand tools. Actuates controls to reverse motors and regulate speed and load. Observes panel-mounted instruments, such as voltmeter, ammeter, and thermocouple thermometer, to measure on and off load current, speed, and temperature increase after specified time. Holds vibrometer against motor or generator housing, observes vibrometer light-beam dial to determine amount of vibration, and listens for excessive noise. Visually examines components to detect mechanical defects. Records test data and writes reports on equipment failures.
May test a particular item and be designated accordingly; for example,
Alternator Tester
Generator Tester
Motor-Controller Tester

8536-122 TESTER, SYSTEMS(electronic equip.) DPT:281
GED: 4 SVP: 7 EC: I 6 PA: L 4 6 7

Tests electronic systems, such as data-processing computers, radio, television and communications installations, and automated- process-control systems:

Compares layout and installation of system, wiring, cables, hardware, subassemblies and components, against specifications to detect assembly errors. Examines solder connections to locate defects. Checks operation of parts, such as rotary switches, potentiometers and variable inductors, by turning dials, to detect binding shafts or other mechanical defects. Interconnects system components, by plugging in cables or connecting wire terminals to terminal boards, using diagrams and hand tools. Connects system to power source and actuates switches in sequence to observe system in operation. Connects test equipment, such as signal generator, dummy antenna, and oscilloscope, to test-points of system to determine factors, such as distortion, circuit linearity and voltage-standing-wave ratio. Monitors meters installed in units of system, observes test equipment and makes adjustments to obtain specified operating characteristics. Corrects circuit malfunctions, by adjusting or replacing components and correcting wiring errors or adjusting parts, such as relays. Tags and returns faulty items.

May specialize in testing a specific system and be designated accordingly; for example,

Calibration Tester
Computer Inspector-Tester
Tester, Control Systems
Transmitter Tester

8536-126 TESTER, TRANSFORMER(electric. equip.; elec. power) DPT:281
GED: 4 SVP: 7 EC: I 6 PA: M 4 7

Tests insulation, resistance and performance of heavy-duty transformers against specifications, using electrical-test equipment:

Connects transformer and power leads to terminal board of test panel. Performs resistance and insulation tests to detect open windings, leakage to ground, or incorrectly wound coils, using electrical-test equipment. Actuates test-panel controls to supply specified voltages and varying loads to transformer. Monitors test-panel meters and oscilloscope which record voltages, current flow and waveform presentation. Switches in standard transformer to enable comparison with transformer under test. Increases transformer load to check circuit breaker operation and transformer fusing. Tests insulation properties of transformer oil, using special-insulation tester. Records test data and routes transformers which do not meet specification to repair area.

May photograph oscilloscope wave-form presentation, using photographic equipment

8536-130 INSPECTOR AND TESTER, AIRCRAFT-ELECTRICAL EQUIPMENT(electric. equip.) DPT:381
GED: 4 SVP: 7 EC: I PA: L 4 7

Inspects and tests aircraft-electrical equipment to ensure compliance to specifications:

Studies inspection data, such as check lists, drawings and work orders, to determine method of inspection. Examines equipment, such as alternators, solenoids and limit switches, prior to installation to detect visible defects. Places components, such as relays, motors and solenoids, in test jigs, and uses test equipment to check operational characteristics. Examines aircraft wiring to detect loose connections and defective insulation. Removes covers from junction boxes, controls and accessories, and examines wiring to terminal posts and components. Switches on heater, de-icer equipment and lights to verify operation. Compiles reports concerning defects and malfunctions.

8536-134 INSPECTOR AND TESTER, AIRCRAFT-ELECTRONIC EQUIPMENT(electronic equip.) DPT:381
GED: 4 SVP: 7 EC: I PA: L 3 4 7

Inspects and tests aircraft-electronic equipment, such as communications, radar and navigation installations, according to specifications:
Inspects equipment wiring, following drawings and equipment

manuals, to ensure conformance to specifications. Switches on equipment and manipulates controls to evaluate factors, such as sensitivity, calibration and output of communications receivers on several frequencies, using frequency meter and output meter. Evaluates calibration and general operation of radio altimeter, using special test equipment. Installs crystals in transmitters and receivers to enable communication on various control-tower and airline frequencies. Performs specified flight tests on equipment to determine factors, such as output of transmitters on various frequencies, performance of pilot-controlled equipment and operational characteristics of radar equipment. Records details of radio transmissions in log books. Records details of equipment malfunction.

8536-138 TESTER, LEAD-ACID STORAGE BATTERY(electric. equip.) DPT:381
GED: 4 SVP: 7 EC: I 6 PA: L 4 7

Inspects and tests lead-acid storage batteries removed at random from production line, to ensure compliance to specifications:

Examines batteries for defects. Tests specific gravity of battery electrolyte and corrects for temperature, using hydrometer, thermometer and chart. Tests battery for electrical capacity at various temperatures, and charge and discharge characteristics, using environmental chamber and electrical-test equipment. Compares test results against specified performance data. Disassembles batteries which do not meet test criteria to determine cause of failure. Writes failure reports with supporting recommendations.

8536-142 INSPECTOR, HEARING AID(electronic equip.) DPT:381
GED: 4 SVP: 6 EC: I PA: S 4 6 7

Inspects hearing aids and related components and accessories for conformance to manufacturing specifications:

Inspects amplifier-printed-circuit board to detect poor soldering, missing parts or breaks in circuit foil, using stereomicroscope. Examines accessories, such as interconnecting cords, microphone and earphone, to detect apparent defects. Measures battery voltage, inserts battery in holder and interconnects parts, according to instruction manual or drawing. Sets output of audio-signal generator and hearing-aid volume control to specified level. Connects audio generator to amplifier input, and connects audio-output-meter to amplifier-output-stage. Turns on amplifier, observes and records audio-meter reading, and rejects amplifiers with output not within specified limits. Writes and affixes tags to rejected items outlining nature of defects. Records inspection data.

8536-146 PROCESS INSPECTOR AND TESTER(electric. equip.) DPT:381
in-process inspector.
GED: 4 SVP: 6 EC: I PA: L 4 7

Carries out in-process inspections and tests of electrical components and their related assemblies and mechanical parts in manufacturing establishments:

Inspects wiring to ensure correct routing and connection of wires, and to detect poorly soldered connections, frayed wires and loose terminal screws. Measures spacing of relay contacts, using feeler gauge. Examines machined surfaces of motor housings, relay-mounting-blocks and gears to ensure specified finish, and checks dimensions, using measuring jigs, micrometers, rules, calipers and squares. Checks dimension and location of mounting holes. Tests electrical characteristics to determine resistance, and to check for short circuits, continuity and grounds as applicable to items, such as motor armatures, relay coils, heating elements and transformers, using electrical-test equipment, such as volt-ohm-milliammeter, insulation tester and growler. Prepares reports on rejects.

8536-150 INSPECTOR AND TESTER, TELEVISION RECEIVER(electronic equip.) DPT:384
GED: 4 SVP: 6 EC: I PA: M 4 6 7

Inspects and tests assembled-television chassis and fully completed television receivers for conformance to manufacturing specifications:
Places chassis in holding jig, connects test signal source to antenna terminals and connects external speaker to receiver chassis. Connects receiver to power source and switches set on. Checks front and rear controls, such as horizontal, vertical, fine tune and buzz controls, and

observes television screen to check for correct functioning of controls. Listens to receiver output to detect distortion or defective speaker. Rotates chassis in holding jig and examines wiring to detect poorly soldered connections, defects in printed circuitry and incorrect wiring. Taps tubes and components, such as capacitors, while observing picture tube to detect light streaks or flutter, and listens to receiver audio for unusual sounds to detect defective components. Observes colour and black-and-white test patterns to ensure colour quality, correct black through white shades and to detect misalignment of tuned stages. Examines cabinet for marred finish, ensures that dials and knobs are correctly positioned and that back is properly secured. Indicates acceptable receiver by affixing tag or by stamping chassis or back of receiver. Records nature of defects found.

8536-154 INSPECTOR AND TESTER, ELECTRON

TUBE(electronic equip.) DPT:381
GED: 3 SVP: 6 EC: 1 PA: S 4 7

Inspects and tests electron tubes or tube components for conformance to manufacturing specifications:

Reads instructions to determine test and inspection requirements for type of tube, and sets controls of tube-testing console, following test standards. Inserts tube in socket of console, turns specified switches and controls, and compares meter readings against standard chart, to detect any deviation from specified limits. Switches on audio generator, taps tube with cork or rubber hammer, and listens for change of pitch, to detect defective tube. Actuates controls of oscilloscope to obtain visual presentation of tube performance and observes pattern to detect deviation from prescribed standards. Examines tube for defects, such as loose base, loose connections and presence of foreign matter inside bulb, using stereomicroscope and polariscope. Determines dimensional characteristics of tube components, such as spacing and diameter of control grid wires and dimensions of anode, using micrometer, scale and microscope. Records number of tubes and tube components inspected, number rejected and type of defects found.

May perform a specific test or inspection and be designated accordingly; for example,

Grid Inspector
Tube Tester

8536-158 INSPECTOR AND TESTER, HOME-GARDENING AND SNOW-REMOVAL UNITS(electric. equip.)

DPT:381

GED: 3 SVP: 5 EC: 1 PA: M 4 7

Inspects and tests electric snow blowers, lawnmowers, hedge clippers or similar devices:

Examines unit to detect poorly painted or scratched surfaces, improper decal application and loose hardware. Actuates controls to start unit, tests operation of controls, checks for undue vibration and checks motor speed, using vibrometer and tachometer. Dismantles unit to enable further fault diagnosis. Measures parts, such as shafts, housing and blades, using special test jig and micrometer. Inspects packaging of dismantled unit for completeness to ensure inclusion of warranty, instruction book and hardware. Tags defective units and prepares and submits inspection reports to supervisor.

May inspect and test a particular unit and be designated accordingly; for example,

Inspector and Tester, Electric Lawnmower
Inspector and Tester, Electric Snowblower

8536-162 INSPECTOR, QUARTZ CRYSTAL(electronic equip.)

DPT:381

GED: 3 SVP: 5 EC: 1 PA: S 4 7

Inspects cut quartz crystals, used in frequency-determining crystal-units, to verify specified angles and to establish their electrical axis:

Places crystal on jig in path of X-ray beam, switches on X-ray equipment, and reads meter that indicates angle at which crystal has been cut. Rejects crystals that are above or below specified tolerance. Rotates crystal in beam of X-ray, until maximum beam deflection is observed to enable verification of axis. Draws line on crystal to indicate direction of axis, using crayon or pencil. Calculates angle adjustments required to correct angles cut, using standardization scales, conversion chart and precision-measuring equipment. Records inspection data, such as number of items inspected and nature of defects.

8536-166 INSPECTOR, CARBON PRODUCTS(electric. equip.)

DPT:384

GED: 3 SVP: 5 EC: 1 PA: L 4

Inspects brushes, electrodes and other carbon products for conformance to manufacturing specifications:

Weighs carbon electrodes and compares weight against specifications. Examines brushes and electrodes to detect burns, cracks and pits, and to ensure that connecting leads and terminals are firmly attached. Checks dimensional specifications, using precision-measuring instruments, such as micrometers, calipers, straightedge and magnifying glass. Computes density of electrodes, following formula and using slide rule, to ensure that electrodes will conduct specified current. Keeps records of inspection data and marks electrodes with chalk to indicate disposition. Obtains samples of electrodes that have been impregnated with pitch or linseed oil and forwards sample to laboratory for analysis.

May be designated according to product inspected; for example,
Carbon-Brush Inspector
Furnace-Electrode Inspector

8536-170 INSPECTOR, COMPONENTS(electronic equip.)

DPT:384

GED: 3 SVP: 5 EC: 1 PA: S 4 7

Inspects electronic components, such as coils, capacitors, resistors, circuit boards, modules and transformers, by comparing components with sample parts or manufacturing standards:

Lifts component or assembly and observes it under stereomicroscope or illuminated magnifying glass for defects, such as broken wires, defective soldering or welding, voids in sealing materials, unevenly wound coils, poor coating and plating, blemishes, scratches and cracked parts. Verifies that assembly is complete, that all connections have been made and that correct components have been used. Ensures that correct wire has been used in circuits, by checking circuit numbering or wire colour code. Rejects faulty components, such as capacitors, coils and grids. Records type and quantity of rejected and accepted components. Measures parts to verify accuracy of dimensions, using fixed gauges, snap gauge, and gram-weight scales. Returns component for removal of excess solder or removes it with knife or file.

May be designated according to component inspected; for example,
Capacitor Inspector
Coil Inspector

Filament-Stem Inspector
Grid Gauge
Transformer Inspector
Wire-Wound-Resistor Inspector

8536-174 INSPECTOR, HOUSEHOLD APPLIANCE(electric. equip.)

DPT:384

GED: 3 SVP: 5 EC: 1 PA: L 3 4 7

Inspects and tests assembled household appliances, such as refrigerators, ranges and furnaces, for adherence to specifications, using mechanical and electrical-test equipment:

Examines metal, plastic and enamelled surfaces for scratches, dents and colour matching. Inspects items, such as trim, shelves and hydrator pans, against check list and mounting instructions. Opens doors, access panels and sliding compartments to ensure ease of movement, proper fit and operation of catches. Connects unit to power source, listens for excessive noise, runs unit through operating cycle and checks operating characteristics against specifications, using electrical-test equipment. Checks refrigerators for gas leaks, using gas-leak tester. Records type and location of defects on check list or inspection ticket.

May inspect a specific type of appliance and be designated accordingly; for example,

Furnace Inspector
Refrigerator Inspector

8536-178 INSPECTOR, MOTOR AND GENERATOR(electric. equip.)

DPT:384

GED: 3 SVP: 5 EC: 1 PA: L 4 7

Inspects electric motors, generators, transformers and associated assemblies for conformance to specifications, by performing any combination of the following duties:

Examines assemblies, such as armatures and field windings, for depth

of mica undercutting between commutator segments, for positioning and winding of armature coils, and even placement of laminations. Examines alignment of parts, such as brush holders and armatures, and checks air gap, using precision-measuring devices. Checks armatures, field coils and wiring visually, to detect wrongly connected leads and poor soldering. Checks for continuity, resistance and insulation properties of windings, using electrical-test equipment. Checks armature eccentricity, using bench tester, and straightens off-center or bent shafts, using hide-faced mallet. Routes items to repair section. Prepares inspection reports containing information, such as nature of reject and applicable supporting data.

May specialize according to item inspected and be designated accordingly; for example,

Armature Inspector
Inspector and Shaper, End Windings
Inspector, Motor
Stator Inspector
Winding Inspector

8536-182 INSPECTOR, REFRIGERATION UNIT(electric. equip.; mech. equip., n.e.c.) **DPT:384**
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Inspects and tests evaporation-type cooling units used in commercial and domestic air conditioners, freezers and refrigerators, according to specifications, by performing any combination of the following duties: Connects unit to test equipment or test panel. Starts compressor and observes and listens to detect obvious malfunction, such as vibration due to loose mounting, and to ensure that cooling is taking place. Tests compressors on malfunctioning unit, using watt meter, or observes test-panel meters. Times unit operating-cycle, using stop watch or observes test-panel indicator. Replaces defective components to correct malfunction. Recommends rework or scrapping of defective components. Records data regarding defects on inspection tag, and attaches tag to unit. Compiles quality-control-statistical data. Dries unit after testing, using dehydrating oven.

8536-186 TESTER, AIR-CONDITIONING-UNIT(electric. equip.; mech. equip., n.e.c.) **DPT:384**
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Tests efficiency of commercial-air-conditioning units under simulated operating conditions:

Connects unit to test panel, or to portable-test equipment, such as hygrometers, thermometers and air-flow meters. Observes instruments and records data, such as relative humidity, temperatures of cooling units and condensers, and movement of air, at specified intervals. Observes panel instruments or connects electrical-test equipment to record characteristics of electric motors. Observes gauges to detect undue vibration of motor-driven devices. Prepares test data on units and installations tested.

8536-190 TESTER, LIGHT BULB(electric. equip.) **DPT:484**
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Tests and inspects completed light bulbs or light-bulb parts for conformance to specifications, by performing any combination of the following duties:

Places lamp filaments on lighted table top and inspects them for length, concentricity, number of turns per inch and for sharp bends and fractures, using optical comparator. Stretches sample filament to breaking point, to determine brittleness. Selects completed bulbs or parts from each machine and examines them for defects, such as poorly soldered bases, cracked stems and damaged filaments, using magnifying glass or optical comparator. Tests internal gas pressure in bulbs, using gas-pressure gauge. Performs mechanical checks, such as torsion test, to detect poorly cemented bases. Inserts light bulbs, photoflash bulbs and sealed-beam units into appropriate fixtures, and measures light output, using electrical-test equipment. Records defects and prepares reports.

May examine machine processes, such as air evacuation, gas filling and soldering, when bulb failures indicate these processes as probable causes of defects.

8536-194 TESTER, ELECTRICAL CONTACTS(electric. equip.) **DPT:684**
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Tests and adjusts electrical switching devices, such as relays, circuit breakers and mercury switches to ensure conformance to specifications:

Examines items to detect defects, such as bent springs and contact arms, misaligned armatures and contacts, and cracked glass housings. Verifies contact clearances and spring tension, using feeler gauges and tension gauge. Determines factors, such as current required to close relay contacts or open circuit breaker contacts, and operating sequence and release timing of contacts, using electrical- test equipment. Verifies correct mechanical operation of devices, by manipulating with fingers. Bends parts, such as armature, flat springs and coil springs, manually or using hand tools, to ensure correct operation. Adjusts calibrating screws to alter contact spacing and spring tension, using hand tools. Adjusts mercury switch contacts to ensure correct operation.

May be designated according to item tested or adjusted; for example,
Circuit-Breaker Tester
Mercury-Switch Tester
Relay Tester and Adjuster

8536-198 INSPECTOR, ELECTRICAL CONTROLS(electric. equip.) **DPT:384**
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Inspects thermal and mechanical controls, such as thermostats, thermal-overload relays and timers, for conformance to specifications: Makes random selection of items, such as timers and overload relays, from assembly area. Examines units for defects, such as surface blemishes, poor soldering and loose terminals. Verifies dimensions, such as shaft diameter, end play, and contact-point spacing, using fixed or dial gauges, micrometers, and magnifying glass. Connects control to electrical-test panel to provide simulated operating conditions. Observes meters and lights to detect malfunctions, such as incorrect thermal action or incorrect positioning of contacts. Inspects equipment at various stages of production to verify correct assembly. Stamps acceptable components and prepares inspection reports.

8536-202 INSPECTOR, ELECTRONIC UNIT(electronic equip.) **DPT:384**
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Inspects electronic units, such as communications receivers, transmitters, data-processing equipment, and subassemblies, for conformance to specifications:

Examines unit on assembly line for soldering defects, using magnifying glass, pick and mirror. Compares unit with parts list and assembly drawings to detect missing or incorrectly placed parts. Traces cable assembly to verify routing of wires to specified component, and examines cable lacing, following drawings and specifications. Verifies dimensions of parts, using precision-measuring equipment. Records nature of defects found, and tags unit or stamps unit to indicate acceptance.

May run continuity tests to detect open circuit in units, such as transformer windings and coils. May be designated according to unit inspected; for example,
Antenna-Tuner Inspector
Radar-Indicator Inspector

8536-206 INSPECTOR, ELECTRON-TUBE-STEM-ASSEMBLIES(electronic equip.) **DPT:384**
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Inspects electron-tube-stem-assemblies for conformance to manufacturing specifications:

Verifies dimensions of stems, using micrometer and rule. Tests tensile and compression strength of stems, and hardness of stem leads, using mechanical-test equipment. Examines stem assemblies under magnifying glass to detect flaws, such as poor lead to glass seal, missing wires and defective welding. Analyzes and records defects found.

May measure weight of filament wire, using balance scales. May remove glass envelope of selected tubes, using glass file, and measure tube components, such as anode, grids and cathode, using gauges, scales and micrometers.

8536-210 TESTER, DRY-CELL BATTERY(electric. equip.)
DPT:384
GED: 3 SVP: 4 EC: 1 PA: L 4

Tests dry cells and dry-cell batteries to determine factors, such as capacity, shelf life and effects of temperature on battery output: Places cells or batteries on test racks and connects battery terminals to test equipment. Actuates switch to connect fixed resistors of specified value, to provide simulated load for battery. Observes test-equipment meters, and records voltage and current at specified intervals. Disconnects load and repeats test after specified time. Records off-load voltage at specified intervals. Turns switch to select resistors of lower values to provide greater load on battery, and repeats test. Performs tests at specified temperatures, using environmental chamber. May prepare sample cells to test various core mixes and electrolyte pastes, using hand tools.

8536-214 TESTER, PICTURE TUBE(electronic equip.)
DPT:384
GED: 3 SVP: 4 EC: 1 6 PA: L 4 7

Tests television-picture tubes for conformance to manufacturing standards: Positions picture tube against rubber facing of holding jig. Attaches cable assembly of monoscope (testing apparatus that produces test patterns) to base of picture tube, and switches on monoscope. Observes tube under test, and sets controls to adjust brilliance and focus. Activates control to connect colour or black-and-white video-source to tube, adjusts control knobs, and observes shades of gray, colour resolution and sharpness of lines. Compares tube under test with reference tube installed in monoscope and observes tube to detect defects, such as presence of gas in tube envelope. Inspects tube for visible defects, such as poorly soldered base pins, scratches and stains. Records number of defective tubes and types of defects.

8536-218 BATTERY-CHARGER TESTER, HEAVY DUTY(electric. equip.)
DPT:384
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Tests high-amperage-type-battery chargers for conformance to manufacturing standards: Removes panels, and inspects charger wiring to ensure connections are secure and parts are properly mounted. Inspects outer surface to detect marred finish. Connects battery-charger cables to specified terminals of tester. Switches on charger, and operates tester controls to connect a resistive load to charger. Turns charger control to various output settings and turns tester controls to increase load on charger. Observes voltmeter and ammeter of tester to ensure charger meets specifications, and compares charger ammeter reading with tester meter, to ensure its accuracy. Increases load on charger to ensure correct functioning of overload relays. Records test data and tags chargers that do not meet specifications.

8536-222 INSPECTOR, AUTOMOTIVE-WIRING-HARNESS(electric. equip.)
DPT:384
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Inspects electrical-wiring-harnesses used in automobiles, trucks and buses, for quality of workmanship and electrical continuity, using mechanical-and-electrical-test equipment: Checks length of harnesses and location and length of individual break-out leads, using wire-measuring jig-board. Inspects to ensure that specified terminals are fitted and that crimped or soldered connections meet specifications. Inspects colour coding to ensure leads at break outs, and other locations, are of size and colour of wire specified. Checks wiring for continuity between specified points, using continuity tester. Notifies supervisor of defects that would affect production. Prepares inspection reports outlining nature of defects found.

8536-226 TESTER, ELECTRONIC COMPONENTS(electronic equip.)
DPT:384
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Tests electronic components, such as capacitors, coils, diodes and resistors, for conformance to manufacturing standards: Connects component to test equipment, such as capacity tester, ohmmeter or production tester. Switches on test equipment and reads

instrument dial or other indicating device to determine factors, such as current leakage, capacity, tolerance limit, inductance, and breakdown voltage of capacitors, resistors, and coils. Checks dimensions of components against specification, using standard gauges and precision-measuring instruments. Examines components for defects, such as short leads, broken envelope or defective seal. Records number of rejects and related information. May be designated according to component tested; for example, Crystal-Unit Tester Variable-Capacitor Tester

8536-230 TESTER, QUARTZ-CRYSTAL UNIT(electronic equip.)
DPT:384
frequency measurer, crystal.
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Measures frequency of quartz-crystal units at various specified temperatures, to determine frequency deviation due to temperature change: Attaches test leads from frequency-measuring instrument to connecting pins of quartz-crystal units. Places crystal units in environmental chamber with opposite ends of leads through aperture leading from chamber. Sets controls to obtain specified temperature inside chamber and monitors thermometer inside chamber to ascertain when specified temperature is reached. Observes digital readings on frequency-measuring device to determine oscillating frequency of crystal unit, and records frequency and temperature. Readjusts chamber temperature to other specified temperatures and repeats frequency-measuring procedure.

8536-234 TESTER, TEMPERATURE-ACTUATED CONTROLS(electric. equip.)
DPT:384
GED: 3 SVP: 3 EC: 1 4 6 PA: L 4 6 7

Tests temperature-actuated devices, such as thermostats and thermocouples, for conformance to manufacturing standards, by one of the following methods: Positions controls on jig and submerges capillary tubes of controls in temperature-controlled bath. Observes thermometer to ensure correct temperature. Adjusts calibrating screw of thermostat, using special tool, and observes indicator lights and thermometer to determine temperatures at which contacts open and close. Stamps acceptable controls, and tags rejects and records nature of defects. Places thermostats in rotating rack and ensures that capillary tubes are immersed in water. Attaches nut at specified location on face of thermostat, using nut driver, fits disk-shaped tool over nut and turns disk until clicking sound is heard from contacts and secures locknut. Rejects units unresponsive to adjustment and records relevant test data. May determine electrical characteristics of thermocouples, using electrical-test jig.

8536-238 INSPECTOR, LAMP PARTS(electric. equip.)
DPT:384
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Inspects moulded-glass beads and other parts used to fabricate incandescent lamps: Inspects glass beads to detect flaws, and measures bead diameter, using prong-type measuring gauge. Inspects glass envelopes and tubing for cracks and other defects. Measures envelopes, tubing, lead wires and bases for conformance to specifications, using micrometer, vernier calipers and gauges. Counts parts and verifies quantity against purchase order. Rejects and segregates parts that do not meet specification and records pertinent information.

8536-242 HELPER, MOTOR TESTING(electric. equip.)
DPT:384
GED: 3 SVP: 3 EC: 1 PA: M 3 4 7

Helps to test electric motors, alternators and associated equipment: Sets up rigid platforms, to provide a base for heavy motors. Directs crane operators in positioning of equipment. Secures motors, alternators and other equipment, using bolts. Obtains and prepares for use, test equipment, such as vibration tester, dynamometer and electrical and mechanical devices, to simulate actual operating conditions. Makes electrical connections to motors, alternators and relays, using hand tools. Assists during test by operating test equipment and

observing and recording meter readings. See also definition for term title, 02-160 HELPER (any ind.).

8536-246 INSPECTOR AND TESTER, RECORD PLAYER(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: M 4 6 7

Inspects, tests and adjusts record players according to manufacturing standards:

Adjusts turntable speeds according to manufacturing specification, using stroboscope and screwdriver. Places records on turntable and switches on changer. Observes transfer action, pickup movement and transfer lever, to ensure specified operation. Adjusts travel of pick-up arm and transfer arm. Listens for motor noise and undue vibration, and tightens loose components, using hand tools. Tests installed changers and associated amplifiers, using test record and audio-level meter.

May install changers, amplifiers, receiver-amplifiers and associated components, in cabinets or enclosures.

8536-250 INSPECTOR, LEAD-ACID BATTERY PARTS(electric. equip.) DPT:684
GED: 3 SVP: 3 EC: 1 5 PA: L 4 7

Inspects lead-acid battery parts for conformance to specifications:

Examines cast-lead parts, such as grids and connectors, and other battery parts, for defective casting, discolouration and other defects. Removes excess lead, burrs, or flashing from parts, using knife, scraper and file. Checks parts against dimensional specifications, using precision-measuring equipment. Segregates rejects from acceptable parts and prepares inspection reports.

May inspect and test stored wet-charge batteries, using hydrometer. May be designated according to part inspected; for example, Grid Inspector

8536-254 INSPECTOR, PRINTED-CIRCUIT BOARD(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Inspects printed-circuit boards for conformance to manufacturing specifications:

Verifies conformance of holes in printed-circuit board against specifications, using plug gauge. Measures thickness of plating, against specification, using micrometer. Verifies printing registration, by measuring distance from edge of conductor areas to side of board and to circuit holes, using radius gauges. Checks board against production drawing and parts list, to verify installation of hardware, such as brackets, eyelets and lugs, and to ensure eyelets and lugs make good contact with conducting foil. Examines plastic coating of board to detect sealing defects, such as cracks and pinholes. Stamps acceptable boards, and tags rejects describing nature of defects.

May test circuit continuity, using continuity tester.

8536-258 INSPECTOR, SCREEN AND APERTURE-MASK ASSEMBLY(electronic equip.) DPT:684
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Inspects television-tube screen and aperture mask to ensure adherence to quality standards:

Examines aperture-mask and screen of colour-picture tube for identifying numbers to ensure mask matches screen. Examines mask and screen for defects, such as coating streaks, contaminants, chips and dents, and blows dust from parts, using air jets. Places mask over screen to ensure holes in mask fit over matching projections on screen. Positions electron-beam shields on mask-support ring and fits spring clips to hold assembly together. Places screen portion over source of ultraviolet light to detect misaligned, missing or discoloured phosphorus dots. Measures diameter of dots, using vernier-scale-equipped microscope. Paints conductive coating around tube screens and anode buttons. Records defects on label and pastes label on defective assembly.

8536-262 TESTER, ELECTRICAL-WIRE INSULATION(wire prod.) DPT:684
GED: 2 SVP: 4 EC: 1 5 6 PA: M 4 7

Tests electrical-wire insulation and repairs defective insulation:

Adjusts tester to accept wire diameter to be run. Threads wire through tester, over high-voltage terminal, and onto take-up reel. Adjusts voltage setting on tester, as specified for particular wire, using chart. Connects jumper to electrical conductor at end of pay-out reel and actuates switch to supply power to tester and motor that drives take-up reel. Monitors operation and stops machine when break in wire insulation is indicated by warning light or buzzer. Examines wire for burn or dark spot to locate defect in insulation. Removes defective insulation, using knife, and wraps uncured rubber tape around break in insulation to form patch. Clamps electric curing block of vulcanizer around patch, switches on vulcanizer and removes device after specified time. Smooths cured patch, using power grinder. Joins wire lengths together, using resistance-butt welder. Observes counter to determine when correct length of wire has been wound on take-up reel and cuts wire, using hand cutters.

8536-266 INSPECTOR, ELECTRIC-CLOCK COMPONENTS(electric. equip.) DPT:664
GED: 3 SVP: 3 EC: 1 5 6 PA: L 4 5 6 7

Inspects electric-clock components for conformance to manufacturing standards:

Inspects components and assemblies for quality of workmanship and correct assembly of parts. Inspects motor assembly to detect broken wires, poor soldering, uneven coil winding and to ensure correct application of protective varnish over windings. Makes random samplings of designated parts, and inspects them to detect uneven plating, blemishes and scratches, using eye loupe and tweezers. Tests motor windings for continuity and grounds, using electrical-test equipment. Rejects and tags defective items, records relevant data and reports abnormal conditions to supervisor.

8536-270 INSPECTOR, TAPE CARTRIDGE AND CASSETTE(electronic equip.) DPT:387
GED: 2 SVP: 3 EC: 1 PA: L 4 6

Inspects master tapes, tape cartridges and cassettes to ensure that quality of sound reproduction meets manufacturer's specifications:

Selects random samples of master tapes, tape cartridges or tape cassettes for quality inspection. Threads master tape through guides in sound-reproduction equipment, or inserts cartridge or cassette in housing-unit of sound-reproduction equipment. Listens to sound reproduction to detect imperfections in sound quality, such as distortion, flutter and fade and drop-out, using earphones. Observes meters on sound-reproduction equipment to ensure that all sound tracks have been recorded on master tape, tape cartridge or tape cassette. Compares recordings with printed codes, listings or labels to ensure that recorded selections conform to printed data. Rejects faulty tapes, cartridges or cassettes, and records defects found.

8536-274 INSPECTOR AND TESTER, BATTERY CASE(electric. equip.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Inspects and tests storage-battery cases for conformance to manufacturing standards:

Inspects battery case dimensions, using templates and acceptance scales. Examines containers for surface defects and quality of painted surfaces and lettering. Places case over form of dielectric tester and actuates switch that applies high voltage across opposite surfaces of battery case. Observes tester panel-lights which indicate defects, such as cracks or pin holes in cell partitions. Places wire-grid cage over case and repeats test to detect defects in outer walls of container. Marks defective cases with chalk.

8536-278 PRODUCTION TESTER, LEAD-ACID BATTERY(electric. equip.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tests assembled storage batteries to ensure conformance to specifications:

Adjusts test equipment to voltage of battery under test. Places test prods across intercell connecting-straps and observes indicating device

to detect incorrect connection of cells. Places test leads across battery posts and observes voltage tester that indicates pass or reject. Examines batteries for defects, such as omission of polarity symbols on battery posts, cracked covers and uneven sealing. Attaches tickets to rejected batteries, indicating nature of defects. May perform additional tests, such as on-load voltage measurements, capacity and specific gravity, using electrical-test equipment and hydrometer.

8536-282 TESTER, ELECTRICAL CONTINUITY(electric. equip.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tests wide range of electrical components to detect open circuits, leakage or shorts and to measure resistance, using electrical-test equipment:

Connects test leads from tester across components, such as transformer windings, chokes and relay coils. Observes lamp or meter, or listens to buzzer that indicates acceptable component. Reads meter to measure resistance of windings. Connects test-leads to toggle, rotary or mercury switch and actuates switch to check make-and-break action. Places armature in growler (armature tester), rotates armature and listens for growling sound, or watches for attraction of steel strip to armature surface that indicates short circuit or shorted turns.

May label components tested, indicating nature of defect. May route defective components to other departments for reworking or repair. May be designated according to component tested; for example, Armature Tester.

8536-286 INSPECTOR, BATTERY PLATES(electric. equip.) DPT:685
GED: 2 SVP: 2 EC: 1 6 PA: L 4 7

Tends machine that splits battery plates, and inspects split battery plates to detect defects in casting and pasting, such as broken or cracked grid structures, and incomplete or uneven pasting:

Starts conveyor to move battery plates to machine. Starts plate-splitting-machine and feeds plates into machine to split them in two. Examines split plates to ensure even application of oxide material throughout grid structure. Examines grid structure to detect broken, cracked or bent members, using magnifying glass. Cleans edges of lugs, using wire brush, and examines lugs to detect flaws in casting. Stacks plates on truck. Records type of plate and defects found, and stamps or signs inspection record.

8536-290 INSPECTOR AND TESTER, LAMPS(electric. equip.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects and tests lamps, such as automotive sealed-beam units, fluorescent tubes, and household lamps, for mechanical defects, quality of workmanship, air leaks, and filament continuity:

Places lamps on table in darkened test booth, passes radio-frequency probe over lamps, and observes lamps to detect abnormal bluish glow that indicates presence of air in lamp. Plugs automobile sealed-beam units into test jig and reads meter that records light intensity. Screws household lamp into socket and observes lighted lamp to ensure that light intensity meets specifications. Touches test prods to end and side contacts, and observes meter deflection that indicates filament continuity and resistance. Inspects lamps for cracked lenses, loose bases or lamp colour. Segregates rejected lamps and records number and nature of defects. Stamps acceptable lamps.

8536-294 INSPECTOR, DRY BATTERY(electric. equip.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects in-process or finished dry-cell batteries for defects, such as dents, short electrodes or missing parts:

Examines dry cells as they pass on conveyor. Picks out defective batteries, examines tactually, and rejects defective batteries. Drops rejects in tote box and places acceptable batteries back on conveyor. Tests samples of batteries, using ammeter and voltmeter. May replace damaged parts and reposition incorrectly placed parts.

8536-298 INSPECTOR, SMALL-ELECTRICAL-APPLIANCES(electric. equip.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects small electrical appliances, such as food mixers, toasters and hair driers:

Examines case and appliance to detect marred or scratched finish and loose fittings and control knobs. Checks accessories, such as hoses for driers, and bowls and paddles for mixers, against packing list, to ensure that parts are correctly packaged and complete. Removes smudges from finish, using sponge or cloth. Performs operational tests, such as toasting bread to test thermostat and ejection mechanism. Places tags outlining defects on appliances that do not meet specifications.

May inspect a specific appliance and be designated accordingly; for example, Checker, Hair Drier Toaster Inspector

8536-299 OTHER INSPECTING AND TESTING OCCUPATIONS, ELECTRICAL AND ELECTRONIC EQUIPMENT FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING

This group includes electrical and electronic equipment inspectors and testers, not elsewhere classified; for example, those who inspect and test mobile-transceivers and navigation-aids, using electronic-test equipment, and those who test electric-railway and subway circuits for power leaks, using electrical-testing devices. Typical examples of occupational titles covered by this residual group definition are:

Inspector, Mobile-Transceivers(electronic equip.)
Inspector, Navigation-Aids(electronic equip.)
Tester, Electrolysis(electric. equip.)

8537-RADIO AND TELEVISION REPAIRMEN

This unit group includes occupations concerned with repairing radio and television receivers, recorders, phonographs and related equipment. Activities include: disassembling, adjusting and calibrating; and soldering and replacing parts, modules and assemblies, using a variety of common and special hand tools and electronic equipment.

8537-110 TELEVISION REPAIR SERVICEMAN(electronic equip.) DPT:281
television repairman.
GED: 4 SVP: 7 EC: 1 PA: M 3 4 6 7

Repairs and services television receivers:

Queries customer to determine nature of television malfunction. Switches on set, listens to sound and observes picture and other tubes to assist in fault diagnosis. Replaces defective tubes and adjusts receiver controls and tuned circuits to correct minor faults. Transports receivers requiring major repairs to repair shop, using delivery truck. Places chassis on repair bench, switches on set to determine fault location, and makes voltage and resistance tests and waveform checks, using vacuum-tube-voltmeter, oscilloscope and schematic diagram. Tests continuity and resistance of windings in components, such as fly-back and vertical-output transformers. Corrects misalignment, using signal generator, oscilloscope and alignment tools. Adjusts controls of colour receiver for colour purity, using colour-bar generator. Replaces defective components, such as capacitors and transformers, using soldering equipment and hand tools. Records time spent and parts replaced.

May repair receivers rejected by inspectors in manufacturing establishment.

8537-114 RADIO SERVICEMAN(electronic equip.) DPT:281
radio repairman.
GED: 4 SVP: 6 EC: 1 PA: L 4 6 7

Repairs radio receivers, phonographs, tape recorders and related equipment, following circuit diagrams:

Removes equipment from cabinet or disassembles it to gain access to chassis or mechanism. Examines underside of chassis of record

players, tape recorders and radios, to detect charred components and worn parts, or defective items, such as drive belts or sprockets. Adjusts or replaces defective parts, following circuit diagrams. Switches on equipment, observes mechanical operation of tape deck and turntable and listens to detect distortion, weak signal or spurious oscillations. Tests electron tubes, resistors and capacitors and reads voltage at specified points, to diagnose faults. Replaces defective parts, such as electron tubes, transistors and capacitors. Aligns receiver tuned-stages. May be designated according to equipment repaired; for example, Hi-Fi Repairman

Tape-Recorder Repairman

8538-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT

This unit group includes occupations in labouring or other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), concerned with fabricating, assembling, installing and repairing electrical, electronic and related equipment.

8538-110 BATTERY-ACID DUMPER(electric. equip.) DPT:886
GED: 1 SVP: 2 EC: I 4 6 PA: M 4

Feeds lead-acid storage batteries to machine which inverts batteries over tank to drain off sulphuric acid solution:

Starts conveyor leading to machine-dumping mechanism and places batteries on conveyor. Places emptied batteries in upright position on conveyor leading to refilling station.

8538-114 DRY-CELL-ASSEMBLY-MACHINE FEEDER
(electric. equip.) DPT:886
GED: 1 SVP: 2 EC: I PA: L 4

Feeds machines that insert cores and carbon rods, affix caps and seals, and position cardboard tubes over zinc containers, to fabricate dry cells:

Removes such items as zinc containers, rods and caps from cartons or conveyor. Places them on ramp, conveyor, turntable or other mechanism that feeds them to capping, sealing, tubing, sleeving or wafer machines. Removes processed units from discharge conveyor and places them on other conveyor mechanism for further processing or places them in trays or boxes.

May be designated according to task performed or machine fed; for example, Carbon-Rod Inserter, Machine Dry-Cell Remover

8538-118 TAKE-OFF-MAN, BATTERY PLATES (electric. equip.) DPT:886
plate take-off man.
GED: 1 SVP: 2 EC: I 4 7 PA: M 4

Removes lead-acid battery plates from plate lug buffing-machine or pasting-drying machine:

Removes twin plates from discharge end of buffing machine and breaks twin plates into separate ones by bending over angle iron. Segregates defective plates and counts and stacks good plates according to type. Removes plates from pasting-drying machine, and brushes excess lead-oxide from plates, using wire brush.

8538-122 RESISTOR-LEAD-WIRE ASSEMBLER(electronic equip.) DPT:887
GED: 1 SVP: 2 EC: I 6 PA: L 4 7

Attaches connecting clamps and wire leads to ceramic cores of wire-wound resistors:

Fits circular flat-metal-terminal clamps around ends of ceramic cores of wire-wound resistors. Positions rivet through clamp and actuates lever of rivetting device to secure clamps. Twists precut wires around ends of ceramic core, using wrapping tool, to fabricate resistors with axial leads. Solders or spot welds resistor wire to terminal clamps or

lead wires, using soldering equipment or spot welder. Bends ends of lead wire into slots of ceramic cores to recess resistor-wire and lead-wire junctions, using hand operated swaging press.

8538-199 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, ELECTRICAL AND ELECTRONIC FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING

This group includes labourers and other elemental workers, not elsewhere classified, engaged in fabricating, assembling, installing and repairing electrical and electronic equipment; for example, those who convey materials and products to and from work areas, bend or straighten lead-wires of resistors and capacitors by hand, and clean electrical or electronic components and parts. Typical examples of occupational titles covered by this residual group definition are:

Cleaner, Electronic Components(electronic equip.)

Labourer, Electrical Products(electric. equip.)

Lead-Wire Bender(electronic equip.)

8539-FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with fabricating, assembling, installing and repairing a variety of electrical and electronic equipment and components.

8539-110 PRECISION ASSEMBLER(electric. equip.: electronic equip.) DPT:381
GED: 4 SVP: 7 EC: I PA: L 4 7

Assembles, tests and repairs precision electromechanical devices, such as servomechanisms, gyros, gear trains and motors, used in computers, radar, guidance systems and similar equipment, performing any combination of the following duties:

Measures and fits parts, such as pivots, jewelled bearings, cams and shafts, to specified tolerances, using precision-measuring instruments. Examines parts for burrs, scratches and dents, and measures surface roughness, using profilometer. Measures hole diameters, clearances, and other dimensions, using precision-measuring equipment. Fits parts together, installs them in housing and aligns parts, using shims, to ensure smooth operation within torque limits. Rubs abrasive paper over surfaces or laps-in close-fitting mechanical parts to prevent binding. Installs mechanical equipment, such as gear trains, bearings and gyro mechanisms, following drawings and using tweezers, stereomicroscope and illuminated magnifying glass. Installs electrical or electronic components, such as motors, power supplies and control and sensing devices, and connects wiring. Tests and adjusts electromechanical devices to synchronize operation, and locates defects, using functional-test equipment. Dismantles unserviceable equipment and replaces worn and defective parts.

8539-114 TEST-EQUIPMENT REPAIRMAN, OIL EXPLORATION(electric. equip.; electronic equip.) DPT:261

GED: 4 SVP: 6 EC: I PA: L 4 5 7

Repairs and modifies electrical-and electronic-test equipment used in oil and natural gas exploration:

Removes equipment from case to enable testing, using hand tools. Interconnects components of measuring equipment on bench or test facility, using cable assemblies and hand tools. Connects equipment to special test apparatus to assess their operation. Inspects wiring, relay contacts, rotary switches and mechanical and soldered connections. Measures electron-tube voltages and current, examines waveforms, and checks output of various stages, using vacuum-tube- voltmeter, oscilloscope and signal generator. Checks and corrects calibration of equipment, such as seismometers, electrical-logging equipment and radio transmitters and receivers, using precision testing and measuring equipment. Modifies equipment to improve performance or provide additional facilities. Instructs field personnel on use, care and servicing of equipment.

8539-118 PHOTOELECTRIC-SORTING-MACHINE REPAIRMAN (electronic equip.) DPT:281
GED: 3 SVP: 6 EC: I 6 PA: L 4 7

Repairs photoelectric-sorting equipment that sorts items or materials according to degree of colour:

Assembles components, such as scanning disks, piping and electrical wiring, using hand tools and electronic-test equipment. Inspects equipment and examines sorted product to detect malfunctions. Disassembles and examines equipment for defects. Locates defective parts, using electrical- and electronic-test equipment. Replaces defective parts, such as photoelectric cells, electron tubes and connectors, using hand tools and soldering equipment. Adjusts sensitivity control for product to be sorted. Maintains equipment log book. Recommends purchase of parts, attachments and other equipment required to update installation.

8539-122 ASSEMBLER, DIELECTRIC AND INDUCTION HEATERS(electric. equip.; electronic equip.) DPT:381
GED: 3 SVP: 6 EC: I PA: M 3 4 7

Assembles dielectric and induction heaters, according to production drawings:

Mounts controls, transformers, reactors and rectifiers in specified locations and secures them in position, using bolts, nuts and other fastening devices. Drills holes in cabinets and panels, and mounts parts, such as switches, terminal blocks and meters, using hand tools and power tools. Installs wiring harness in cabinet and secures harness in position, using plastic clamps. Brazes hose nipples on tanks and coils, and connects coil to water supply, using oxy- acetylene torch and soldering equipment. Runs leads from wiring harness to components, such as rectifiers, relays and electron tube sockets.

8539-126 ASSEMBLY-MACHINE SET-UP MAN(electric. equip.; electronic equip.) DPT:260
GED: 3 SVP: 5 EC: I PA: M 3 4 5 7

Sets up and maintains production machines and equipment, such as coil-winding machines, wire-stripping-and-cutting machines, induction heating units, spot welders and name-plate-stamping machines, used in the production of electrical and electronic equipment, by performing any combination of the following duties:

Reviews instructions, specifications and production schedules to determine tooling, material and parts requirements for items to be produced or assembled. Sets machine stops and counting mechanisms. Installs dies, welding electrodes and holding fixtures in machines, using hand tools. Adjusts machine speeds, material feed mechanisms and stops. Arranges work flow on assembly lines to facilitate production. Makes trial runs to ensure correct machine operation and informs operators regarding production requirements. Samples machine output and makes adjustments when necessary. May expedite material from stockroom.

8539-130 ELECTRIC-TOY REPAIRMAN(electric. equip.) DPT:264
GED: 3 SVP: 5 EC: I PA: L 4 5 7

Repairs electrically-operated-hobby equipment and toys, such as components of model-railroad equipment, slot cars and animated toys, using hand tools and electrical-test equipment:

Examines equipment to detect loose or broken conductors or damaged or binding gear-train mechanisms. Checks continuity of voltage supply input to small drive motors, switches and controls, using volt-ohm-milliammeter. Ensures that motor brushes move freely in holder and replaces damaged or worn brushes. Cleans commutator surfaces, using swab and cleaning solvent. Replaces defective motors and light bulbs. Resolders broken wires, using soldering gun. Cleans wheels and electrical contacts, using cleaning solvent. Lubricates moving parts, using specified lubricant. Advises customers on care, installation and maintenance of equipment.

May replace mechanical parts of electrically-operated toys or hobby equipment.

8539-134 ELECTROLYTIC-CELL REPAIRMAN(chem., n.e.c.) DPT:384
GED: 3 SVP: 5 EC: I 6 7 PA: M 3 4

Assembles, installs and repairs electrolytic cells used in production of chemicals, such as chlorine, caustic soda and hydrogen, by performing any combination of the following duties:

Starts concrete mixer and pours concrete slurry into assembled moulds, to cast replacement sections of electrolytic cells. Positions copper bars, graphite plates or carbon electrodes in cylindrical form and secures them by pouring molten lead into form to fabricate anode unit. Assembles cathode rings on ends of cylindrical form. Wraps asbestos paper and steel wire screen around jig assembly to fabricate cathode pot. Applies putty, asbestos compound and paint, using putty knife, putty extruder and brush, to seal cathode connections and joints. Replaces spent or defective cell units, such as anodes and cathodes. Cleans electrical-connecting devices, electrolytic cells, and level gauges. Washes cathode screens to remove asbestos. Coats screens by dipping them in asbestos slurry. Measures voltage drop from anode to cathode of operating cell to determine effectiveness, using voltmeter. Records data, such as condition of cell units and parts used.

8539-138 IMPREGNATOR AND DRIER(electric. equip.; electronic equip.) DPT:682
GED: 3 SVP: 5 EC: I 3 6 7 PA: M 4 7

Controls ovens, vacuum equipment and impregnating tanks to impregnate and dry or bake electrical and electronic components, such as transformers, relays and capacitors, with insulating and protective varnishes, oil, and other materials, employing either of the following methods:

1. Places small components on racks. Sets controls of impregnating tank to maintain specified liquid temperature. Lowers rack into tank and removes impregnated components after specified time. Places components in oven and sets timer for specified baking. Removes components and examines them for adequate sealing and to detect peeling. Dips leads into thinner bath to remove varnish or cleans leads and terminals, using knife and wire brush. 2. Places components into vacuum-impregnating tank, manually or using hoist. Sets controls to maintain specified impregnating-liquid temperature and flow of liquid. Operates controls to start vacuum and liquid pumps, and to regulate pressures, to impregnate components. Records information, such as temperature and degree of vacuum from recording instruments. Tests liquid viscosity and adds thinner as required. Cleans equipment, using stripping tank.

May be designated according to component treated; for example, Capacitor-Treating-Tank Operator

8539-142 CRYSTAL GROWER(electronic equip.) DPT:384
GED: 3 SVP: 4 EC: I PA: L 4 7

Grows crystals from material, such as germanium and silicon, for use in semiconductor devices, such as transistors, diodes and micro-circuits:

Places germanium in graphite boat and places boat in gas-reduction furnace. Actuates controls to regulate flow of hydrogen into furnace and ignites burner jets. Removes boat from furnace after specified time, weighs pig (reduced material) and records weight. Replaces pig in boat and fastens boat to conveyor in electric-refining-furnace. Moves controls to regulate furnace and flow of helium gas used as a purifying agent in furnace to refine pig. Places seed crystals (nucleus on which crystal forms) and refined pig into crucible, using tweezers or vacuum-pickup tool, and adds specified amounts of ionizing impurities, such as arsenic or boron. Places crucible into crystal grower and actuates controls to regulate temperature. Observes crystal formation and adjusts controls to regulate crystal growth. Records data, such as seeding time, turning speed, growing time and type of impurities added. Disassembles grower and cleans vacuum chamber.

May form crystal by melting ingot in crucible of electric draw crystallization-furnace and lowering seed crystal into melt. May be designated according to material processed or by type of process; for example, Germanium Processor
Ingot Processor

8539-146 DIFFUSION-FURNACE OPERATOR(electronic equip.) DPT:384
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Diffuses chemicals into surface of silicon or germanium wafers used in the manufacture of transistors, diodes and solar cells:

Measures or identifies specified quantities of treating agents, such as arsenic trioxide, boron and phosphorous gases, and injects or pours these agents into quartz boats or quartz spoon (gas generating device). Places boats in preheater or connects spoon to gas or furnace valves. Turns valves to regulate flow of argon, nitrogen or helium gas, and starts preheater to expand and disseminate gas and treating agents in furnace. Immerses wafers in acid solution to remove surface contamination and rinses wafers in de-ionized water. Removes boat from preheater, places wafers on boat, using vacuum-pickup tool, and places boat in furnace to diffuse wafers. Removes boat after specified time and cleans and rinses wafers. Reheats wafers in furnace for specified time to diffuse additional agents into wafers. Records relevant processing data.

May compute diffusion time and temperatures, following formulas. May verify diffusion depth, using calibrated microscope.

8539-150 ANTENNA INSTALLER(electronic equip.) DPT:664
GED: 3 SVP: 4 EC: B 6 PA: M 2 3 4 7

Installs antennas for reception of television and frequency-modulation-broadcast stations:

Secures antenna-mounting-base to roof or other structure, using lag screws or other fasteners. Assembles mast sections and secures antenna to mast. Attaches guy wires to mast. Attaches transmission line to antenna and mast and secures it in position, using stand-off insulators. Attaches mast to mounting base and secures antenna in position, using hand tools. Attaches guy wires to roof or adjacent structures and tightens guy-wire turnbuckles to achieve an even tension on each guy wire, using hand tools. Threads transmission line through insulators to television receiver. Switches on receiver and observes picture or test equipment, and directs worker to orient antenna for optimum receiver performance, using hand-held transceiver.

May install and adjust television receivers in customers' homes.

8539-154 ASSEMBLER, ELECTRICAL-WIRE GROUP (air & space-craft; electric. equip.; electronic equip.) DPT:684
harness builder.
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Assembles electrical-wire conductors to specified configuration to fabricate wiring harnesses and cable assemblies used in electrical and electronic equipment, such as aircraft-electrical systems, radio transmitters and receivers, and electronic-computing equipment:

Cuts wire or coaxial line and insulating sleeving to length, and strips insulation and metal braid from wire ends, using mechanical cutting and stripping devices. Slips insulated sleeving over wire ends. Selects wire or coaxial line of gauge, colour, number, length and type specified by drawing, and routes wires along and around upright pegs of cable-harness board, following coloured lines or numbers marked on board. Applies temporary binding to hold wires in place. Withdraws wire ends from bundle at predetermined locations along cable, to form breakouts. Laces wires together and reinforces cable at breakouts and bends, using nylon or waxed cord. Tins wire ends, using flux and solder pot. Attaches terminals and connecting devices to wire ends, and fastens wire ends to fixtures, plugs, terminal strips and printed-circuit boards, using hand tools, soldering equipment, stereomicroscope and miniature-welding equipment. Attaches identifying bands to cable or individual conductors.

May brush or pour plastic-sealing compound into cable end of plugs to provide protective seal. May enclose cable inside insulated tubing to insulate and protect cable.

8539-158 AUTOMATIC-WIRE-WRAPPING-MACHINE TENDER (electric. equip.; electronic equip.) DPT:685
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Tends machine that automatically wires control panels and plugboard-type subassemblies used in manufacture of machines, such as punched-card and magnetic-tape business machines:

Reads work order to determine number and type of units to be wired, and specified punched-card deck to be used in card reader for machine

control of wire-wrapping machine. Places card deck in feed hopper of card reader. Verifies alignment of terminal pins in unwired panel or plugboard, visually, or using template guide. Straightens misaligned pins, using special hand tool. Mounts unwired unit in wiring pallet (holding fixture), and positions pallet in machine. Actuates controls to start machine that automatically routes, cuts, strips and wraps ends of wires around terminal pins, to install wiring. Monitors machine operation and indicator lights on control console to detect machine malfunctions. Removes wired panel from machine. Corrects minor machine malfunctions, using hand tools. Notifies repairman of serious malfunctions or need for change in machine setup. Tests completed work at specified intervals to determine mechanical strength of connections, using tensile tester.

8539-162 PHOTORESIST PRINTER(electronic equip.) DPT:381
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Etches patterns on crystal wafers to be used for subsequent cutting of wafers into transistor crystals, using projection or contact printer:

Sprays or brushes photoresistant solution on wafer to sensitize it to light. Positions wafer on vacuum chuck. Fits specified mask in holder over wafer to align pattern of mask with specified cutting planes, or to superimpose one pattern over another, and verifies alignment, using microscope. Brings mask in contact with wafer and exposes sensitized wafer to arc light to print pattern on wafer. Removes wafer from printer and places it in developing solution to dissolve unexposed photoresistant material, leaving pattern imprinted on wafer. Immerses wafer in etching solution to remove oxide coating or to etch unexposed surfaces. Inspects wafer to detect pin holes, undercutting and misalignment defects, using microscope.

8539-166 GAUGER, SEMICONDUCTOR MATERIAL (electronic equip.) DPT:384
GED: 3 SVP: 3 EC: 1 PA: S 4 7

Measures thickness of sliced or diced semiconductor wafers or pellets used in manufacture of solid-state devices, such as transistors and diodes:

Positions gauge block on instrument bed under spindle tip, and turns screws on gauge head to set specified distance between spindle tip and block. Places wafer or pellet of semiconductor material, such as germanium or silicon on block, using tweezers or vacuum-pick-up tool. Pushes plunger that presses spindle tip on wafer or pellet, and reads thickness dimension from gauge dial. Places wafers on numbered cards, according to thickness. Records thickness of individual pellets and places pellets in containers. Computes average size and size-range of pellets in container, using calculating machine. Labels containers, indicating size-range of contents, type of material and machine number.

8539-170 ELECTRODE INSTALLER(non-metal. min. prod., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: 1 5 7 PA: VH 4

Assembles and installs electrodes in arc furnaces used during manufacture of abrasives:

Constructs working platform over furnace well, using planks and timbers. Presses buttons to lower furnace head and electrodes to convenient working position. Removes used electrode sections from sockets, using wrenches and leather-faced grips. Collects new-electrode sections from storage area, using handtruck. Cleans sockets, using air hose and rebuilds electrodes with new sections, using grips and wrenches. Insulates sides of electrodes to ensure current arcs at bottom.

May use adhesive to assemble electrode sections. May fabricate electrodes, using resistor mix (mixture of carbon and sand).

8539-174 COIL-WINDING-MACHINE TENDER(electric. equip.; electronic equip.) DPT:685
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Tends coil-winding machine that automatically winds wire coils used in fabrication of small electrical and electronic components, such as transformers, solenoids and chokes:

Fits spools of wire onto machine spindle and threads wire through guide mechanisms. Places coil form in position on machine, and sets winding speed, turn counter and regulator. Adjusts wire-tension device according to size of wire being wound. Starts machine and observes

winding process to detect wire abrasion or uneven spacing. Stops machine and pulls out loops of wire, as specified, to form tap wires. Tapes coil to secure taps and windings in position. May be designated according to type of coil wound; for example, Audio-Transformer-Coil Winder(electronic equip.) Radio-Frequency-Choke Winder(electronic equip.)

8539-178 ELECTROLYTIC-ANODE CHANGER(non-ferrous metal) DPT:664
GED: 2 SVP: 3 EC: I 3 5 6 7 PA: H 3 4

Replaces and renews carbon anodes of electrolytic cells used in processing aluminum or magnesium, by performing any combination of the following duties:

Bolts copper rod to steel studs embedded in carbon blocks to facilitate removal of anode. Disconnects anode-assembly from connector arm, using wrenches. Signals other worker to operate crane that lifts burnt anode from pot and lowers new one in place. Cleans connector arms, using sandblasting hose. Fastens anode rod to connector arm and suspends it in bath. Plants stubs in new anode through channel holes to permit flow of current. Spreads alumina on bath to prevent oxidation, using shovel and rake. Breaks burnt carbon block embedded in desintegrated anode, using sledge hammer. Unbolts steel studs from copper rod, using wrench. Shovels broken carbon into boxes and loads rods and stubs on hand truck for removal. Cleans and straightens stubs and rods, using chipping gun or disk grinder. Chips solidified metal from pots, using chisel and hammer.

May fabricate carbon-graphite anodes, using lathe, material-handling equipment, gas torch and hand and power tools.

8539-182 CELL-MAINTENANCE MAN(non-ferrous metal) DPT:684
GED: 2 SVP: 3 EC: I 6 7 PA: H 3 4

Cleans, replaces and repairs components of electrolytic cells in non-ferrous metal refinery, by performing any combination of the following duties:

Disconnects electrical and pipe connections, and removes retaining bolts to free cells, using wrenches. Removes top of closed cells and cathode and anode assemblies, using tension handles, prybars and hoist. Inspects anodes and cathodes for deterioration. Adjusts anode and cathode spacing, to prevent pointing, using gauges and hand tools. Cleans and smooths electrical connections for better contact, using emery cloth, sand paper or electric buffer. Repositions cell bottom, anode, cathode and cell top in place, using hoist. Bolts assemblies together and replaces sight glasses, funnels and percolator pipes. Turns valves to start electrolyte or brine flow. Measures thickness of cathode-blade and length of anode to determine remaining usable life. Scrapes and washes putty, manganese or dirt from cell assembly, using hand scraper and hose. Applies coating of non-oxide grease to remove oxide and scale, using grease gun. Transfers defective units to repair room and obtains replacement parts. Secures electrical connections to bus bar. Seals joints with putty, mortar and asbestos. Cleans deposits from cell walls and bottoms, using scraper. May plate pots, anodes and other components with nickel to ensure proper contact. May fabricate and repair cell components. May be designated according to type of cell or solution processed; for example, Mercury-Cell Cleaner

8539-186 COIL WINDER, MANUAL FEED(electric. equip.; electronic equip.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Winds coils used in manufacture of items, such as transformers, relays, solenoids and inductors, using manually-fed coil-winding machine:

Installs arbor in chuck of machine, using hand tools. Fits coil form or part on which coil is to be wound, on arbor. Fits spools of specified wire on machine spindle. Tapes coil-end to coil-form or secures end to coil terminal. Turns handle or switches on motor to turn spindle, and guides wire to achieve even winding on form. Observes counter, stops machine and pulls out loop of wire to form coil tap when required number of turns have been wound, or stops machine to place insulation between layers of coil when winding layer-wound coils. Wraps coil with tape or brushes insulating varnish over windings. May solder coil taps and ends to terminals.

8539-190 ENCAPSULATOR(electric. equip.; electronic equip.) DPT:684
GED: 2 SVP: 3 EC: I 3 6 PA: L 4 7

Encases electrical and electronic components, such as transformers, chokes and semi-conductor devices, with protective materials: Pours liquid or powder encapsulating material into encapsulating device. Positions tray of items under outlet of tank containing molten-encapsulating material. Actuates controls to force specified amount of encapsulating liquid onto surface of items. Tends press that moulds epoxy compound around components, or dips tray of items into encapsulating liquid. Removes and places items on drying frame or in oven to bake sealing compound. Inspects encapsulated items for defective sealing, such as chips or pin holes. Cleans and polishes surface of encapsulated items, using solvent. Removes excess coating from leads and terminals, using hand tools and solvent.

8539-194 TRANSFORMER ASSEMBLER(electric. equip.; electronic equip.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Assembles small electrical and radio components which use laminated steel cores, such as power transformers and low-frequency chokes:

Inserts E-shaped laminations inside transformer or choke-coil-form openings, alternately from side to side, and places I-laminations across legs of each E to complete magnetic circuit. Aligns laminations, using mallet. Compresses laminations, using clamp, to enable fitting of specified number of laminations. Attaches coloured lead-wires to transformer windings, following colour code, or connects windings to terminal board, following production drawings. Secures leads to transformer core, using tape and cement. Positions side or top and bottom covers, inserts bolts through covers and laminations, and tightens nuts to secure covers and compress laminations, using hand tools. Places core-terminal assembly in case, pours molten asphalt over windings, and secures base and terminal board, using soldering equipment, to produce hermetically sealed component.

May specialize in the assembly of a particular component and be designated accordingly; for example, Filter-Choke Assembler(electronic equip.) Specialty-Transformer Assembler(electric. equip.)

8539-198 WIRE-STRIPPING-AND-CUTTING-MACHINE TENDER, AUTOMATIC(electric. equip.; electronic equip.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Tends machine that automatically straightens, cuts to length, and strips insulation from ends of wire for use in electrical or electronic applications:

Places spool of specified wire onto play-out spindle, and threads wire through feed rolls. Adjusts machine controls for wire diameter and to cut and strip wire to specifications. Starts machine and monitors operation. Places boxes under machine ejection roll to collect processed wire or gathers, bundles and tags cut and stripped wire. Periodically examines processed wire to ensure cutting and stripping specifications are met. Observes counter and records quantity of wire processed. Replaces dull or broken cutter or stripping blades. May install drive adjustment and tension or adjustment rolls. May tend wire-making machine.

8539-202 CODING-MACHINE TENDER(electric. equip.; electronic equip.; wire prod.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that prints identification codes on material, such as insulated copper wire, tape, and plastic tubing:

Installs specified code letters, numbers and symbols in machine mandrel, using tweezers. Moves controls to regulate pressure of stamping die and heating device on mandrel, and adjusts machine for diameter or size of item to be marked. Starts machine and inserts end of material between feed rollers of machine. Feeds end of printed material into machine take-up reel. Monitors printing process and makes machine adjustments when necessary.

May be designated according to material marked; for example, Cable-Coding-Machine Tender Wire-Numbering-Machine Tender

8539-206 CRIMPING-MACHINE TENDER, CONNECTORS
(electric. equip.; electronic equip.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Attaches bare ends of insulated wires to connecting lugs and connector pins, according to production standards:
Fits specified dies into pneumatic-crimping equipment, according to lug, connector pin and wire sizes to be used. Places wire into lug or connector pin opening, and positions lug or pin into jaws of crimping mechanism. Crimps lug or connector pin by actuating control of crimping device. Uses hand-crimper for special applications or low-volume production runs.

8539-210 FILLING-MACHINE TENDER(electric. equip.;
electronic equip.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that fills bases or top caps of electron tubes or light bulbs with bonding cement:
Feeds bases or top caps into holding device or hopper of automatic-filling machine. Adjusts temperature controls for prescribed cement viscosity, and opens valves to dispense measured amounts of cement. Checks bases or top caps for adequate soldering of leads, and observes filling operation to ensure conformance to specifications.
May be designated according to item filled; for example,
Base-Filling-Machine Tender
Top-Capping-Machine Tender

8539-214 COIL FINISHER(electric. equip.; electronic equip.)
DPT:687
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Finishes coils for assembly in electronic or electrical equipment, by performing any combination of the following duties:
Pulls out tap wires from coils, using pick and tweezers. Wraps coil with adhesive tape and bends coil-leads into specified position. Removes enamel or cotton insulation from ends of wires, using solvent or knife. Tins wire ends, by dipping them in solder pot. Brushes protective varnish over coil-turns. Tins prepared insulated-wire leads and connects them to coil-wires, using soldering equipment. Wraps tape around coils. Tests coil, using continuity tester.

8539-218 LAMP-FILAMENT PROCESSER(electric. equip.)
DPT:687
GED: 2 SVP: 2 EC: 1 6 7 PA: L 4 7

Dissolves wire mandrels on which tungsten wire has been wound, to produce incandescent-lamp filaments:
Mixes acid solution, following formula, and pours solution into

revolving bowl positioned in heated and vented tank. Empties tray of wire-wound mandrels into acid. Observes action of acid to detect dissolution of mandrels. Pours solution from bowl into acid neutralizer. Rinses filament-coils with water to remove any traces of acid. Places tray of coils into oven to dry, and removes tray after specified time.

8539-222 SALVAGE MAN, STORAGE BATTERY(electric.
equip.) DPT:687
GED: 2 SVP: 2 EC: 1 4 PA: H 4

Recovers lead oxide, lead and other material from defective lead- acid storage batteries, for reprocessing and reuse:
Transports containers filled with salvageable material, such as defective battery plates and lead-oxide paste, to recovery station. Dumps salvage into screening tank, using hoist. Runs water into screening tank to wash lead oxide from plates and through screen into lower part of tank, using hose. Drains water from screening and settling tanks. Removes washed-lead plates from screening tank and places them in shipping containers. Shovels lead oxide from tank and salvage trap of drain into steel drums. Segregates other reusable scrap.

8539-226 WIREWORKER(electric. equip.; electronic equip.)
DPT:687
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Prepares electrical wire or coaxial cable for various applications such as wiring for radio and television chassis, communications equipment and control systems, by performing any combination of the following duties:

Cuts wire or coaxial cable to specified length and removes insulation and braid from wire ends, using hand tools, measuring jig and wire-cutting-and-stripping devices. Twists and inserts wire ends into terminal lugs, and crimps lugs, using crimping tool. Dips wire ends into solder pot to tin wire, and solders ends to terminal lugs, using hand tools and soldering equipment. Stamps code numbers on individual wires, using wire numbering machine. Wraps identification band or tape around individual wires.

**8539-299 OTHER ELECTRICAL AND ELECTRONIC
FABRICATING, ASSEMBLING, INSTALLING
AND REPAIRING OCCUPATIONS**

This group includes electrical and electronic assemblers, installers and repairmen, not elsewhere classified; for example, those who assemble electrical connectors, and rebuild television- tuners. Typical examples of occupational titles covered by this residual group definition are:
Connector Assembler(electric. equip.)
Television-Tuner Rebuilder(electronic equip.)

854-FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS

This minor group includes occupations concerned with fabricating, assembling and repairing a variety of products made from wood, such as furniture and display cabinets and doors; frames for doors, windows and pictures; barrels, caskets and boxes; and stringed and fretted musical instruments. These occupations are classified in the following unit groups:

- 8540** Foremen: Fabricating, Assembling and
Repairing Occupations, Wood Products
- 8541** Cabinet and Wood-Furniture Makers
- 8546** Inspecting and Grading Occupations:
Fabricating, Assembling and Repairing,
Wood Products
- 8548** Occupations in Labouring and Other
Elemental Work: Fabricating,
Assembling and Repairing, Wood
Products

**8549 Fabricating, Assembling and Repairing
Occupations, Wood Products, n.e.c.**

**8540-FOREMEN: FABRICATING, ASSEMBLING AND
REPAIRING OCCUPATIONS, WOOD PRODUCTS**

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in fabricating, assembling and repairing a variety of products made from wood.

**8540-110 FOREMAN, CABINET AND WOOD FURNITURE
MAKERS(furn.; woodworking) DPT:138**

Supervises and co-ordinates activities of workers engaged in the assembly and repair of wooden products; such as, home furniture, picture frames, office equipment, doors, window and door frames, and store fixtures, (Unit Group 8541):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise activities of workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Cabinetmakers(furn.)

Foreman, Furniture Assembly(furn.)

Foreman, Gluing(furn.)

Foreman, Laminating

Foreman, Sash and Door Shop(woodworking)

**8540-114 FOREMAN, INSPECTING AND GRADING
OCCUPATIONS: FABRICATING, ASSEMBLING
AND REPAIRING, WOOD PRODUCTS(furn.) DPT:138**

Supervises and co-ordinates activities of workers engaged in inspecting and grading cabinets, furniture, and other products made from wood, (Unit Group 8546):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise and co-ordinate activities of workers engaged in inspecting and grading a particular product and be designated accordingly; for example,

Foreman, Furniture Inspectors

Foreman, Television Cabinet Inspectors

Foreman, Wood-Product Graders

**8540-199 OTHER FOREMEN: FABRICATING,
ASSEMBLING AND REPAIRING
OCCUPATIONS, WOOD PRODUCTS**

This group includes wood products foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in fabricating, assembling and repairing caskets, boxes, barrels, buckets and other wood products. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Box Maker(woodworking)

Foreman, Coopers(woodworking)

8541-CABINET AND WOOD FURNITURE MAKERS

This unit group includes occupations concerned with fabricating, assembling and repairing wooden articles, such as cabinets, furniture, store and office equipment, doors, and frames for doors, windows and pictures from stock or previously prepared parts, and fitting and installing associated hardware, such as latches, hinges and handles. Activities include operating, manipulating and tending a variety of common and special woodworking machines, equipment, hand and power tools to assemble, fit, fasten and glue products. Occupations concerned with the machining of

wooden parts are classified in Unit Group 8355, PLANING, TURNING, SHAPING AND RELATED WOOD-MACHINING OCCUPATIONS. Occupations concerned with painting and polishing wooden furniture are classified in Unit Group 8595, PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION.

8541-110 CABINETMAKER(furn.) DPT:280
GED: 4 SVP: 7 EC: 1 5 7 PA: M 4 7

Constructs and repairs wooden articles, such as domestic, store and office furniture, fixtures and other related equipment, following specifications and drawings and using woodworking machines and power and hand tools:

Studies specifications and drawings of articles to be made or prepares specifications. Marks outline or dimensions of parts on paper or lumber stock as specified. Matches materials for colour, grain or texture. Sets up and operates such woodworking machines as power saws, jointer, mortiser, tenoner, moulder and shaper to cut and shape parts from stock. Trims parts or joints for snug fit, using tools, such as planes, chisels or wood files. Bores holes for insertion of screws or dowels, by hand or by use of boring machine. Glues, fits and clamps parts and subassemblies together to form complete units, using clamps or clamping machine. Drives nails or other fasteners to reinforce joints. Sands and scrapes surfaces and joints of articles to prepare them for finishing. Installs hardware, such as hinges, catches and drawer pulls.

May repair and refashion high-grade articles of furniture. May dip, brush or spray assembled articles with finishing materials, such as stain, varnish or paint. May make particular types of cabinets and be designated accordingly; for example,

Furniture Cabinetmaker

Refrigerator Cabinetmaker

Television Cabinetmaker

8541-114 LAY-OUT MAN(furn.; woodworking) DPT:281
GED: 4 SVP: 7 EC: 1 5 PA: L 4 7

Lays out outlines of frames and furniture parts on wood stock, working from engineering drawings, job orders, models and specifications, to guide machine operators:

Studies drawings of assembly to be made. Selects stock lumber of necessary size. Measures and marks stock, outlining cuts to effect maximum utilization of material, and provide a guide for subsequent machine operations, using rule, square, pencil or crayon.

May trace outlines from engineering drawings for decorative or irregular cutting on bandsaw. May construct wooden models of products, using woodworking machines. May trace around patterns to indicate cutting lines.

8541-118 ASSEMBLER, FRAME AND MIRROR(furn.) DPT:484

trim and mirror installer.

GED: 3 SVP: 6 EC: 1 PA: L 4 7

Attaches decorative moulding and mirrors to bathroom cabinets, using hand tools:

Measures cabinet and orders pre-cut moulding, according to measurements and job specifications. Assembles moulding to make frames for cabinets and mirrors, using hand tools. Trims frame to fit cabinet, using knife blade, and fastens frame to cabinet using screws and screwdriver. Screws sliding rails to cabinet, sets mirrors in rails, and adjusts rail screws to ensure smooth sliding action, using screwdriver. Attaches hinged vanity mirrors to cabinet, using screwdriver. Cleans and polishes mirrors and cabinet to prepare unit for shipment.

May cut and mitre moulding, using handsaw and mitre box. May paint and decorate moulding with lacquer, using paint brush.

8541-122 DOWEL-INSERTING-MACHINE SET-UP
OPERATOR(woodworking) DPT:380
 GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Sets up and operates machine that bores holes and glues and inserts dowels in ends of door and sash rails:
 Adjusts stock guides, pressure arms, and glue discharge pipes, and inserts and spaces drills in chucks to accommodate size of rails to be processed, using stock sample, jig, gauge, rule and wrench. Pours glue into reservoir, loads dowel hopper, and starts machine. Feeds trial rail into machine and checks spacing of dowels, using rule and caliper. Operates machine by pressing buttons to activate automatic feed mechanism or feeds machine by placing stack of rails in feed hopper. Observes operation of machine to prevent malfunctions.

8541-126 REPAIRMAN, ASSEMBLED WOOD PRODUCTS
 (furn.; woodworking) DPT:684
 GED: 3 SVP: 4 EC: 1 5 PA: M 4 7

Repairs surface defects of wood products; such as, sashes and doors, furniture, cabinet work, picture frames and other wood pieces to prepare them for finishing, gilding and painting:
 Visually inspects workpiece for rough edges or surface nicks, nail holes, cracks, open seams, veneer blisters, glue, dirt or inspector's marks. Trims and smooths rough edges and surfaces and removes scratches, dents, dirt and glue, using knife, scraper and sandpaper. Fills cracks, seams, dents and nail holes with filler, such as putty or plastic wood. Touches up defects and filler, using stain or paint. Glues loose veneer to surface.
 May cut out damaged or blistered veneer or moulding, and trim, fit and glue matching piece in place. May reglue defective joints. May be designated by product repaired; for example,
 Repairman, Picture Frame(furn.)
 Repairman, Sash and Door(woodworking)
 Repairman, Wood Furniture(furn.)

8541-130 ANTIQUER(furn.) DPT:684
 distresser.
 GED: 3 SVP: 4 EC: 1 PA: M 4 7

Simulates antique finish on furniture:
 Studies furniture to visualize desired effect and to determine working procedure. Marks surface of furniture using stylus, crayon or spray paint, or beats surface with rough-edged object, such as chain, broken bottle, cinder bag or rock to distress (simulate antique) furniture finish. Uses hand roller to round sharp edges to give effect of normal wear.
 May devise own method to distress furniture to customer's specifications.

8541-134 WEAVER, CHAIR SEAT(furn.) DPT:684
 GED: 3 SVP: 4 EC: 1 PA: L 4 7

Weaves chair seats from materials, such as fibre, rattan, reed or willow, by performing any combination of the following duties:
 Softens weaving material by placing it in humidifying cabinet and steaming it for prescribed time. Clamps seat frame in clamp table and weaves material in, through and around frame, pulling material tight by hand and twisting ends around and between rows to prevent slackening and to conceal them. Cuts off surplus material, using snips. Consolidates rows of weaving by forcing rows together, using wood block or special tool.
 May bleach woven chair seats. May brush liquid glue on chair seat to harden fibre and varnish finished chair seat.

8541-138 GLUE-BONDING-MACHINE TENDER(furn.; woodworking) DPT:585
 GED: 3 SVP: 4 EC: 1 5 7 PA: M 4 7

Tends machine that utilizes heat and pressure to cure glue between wooden furniture parts to bond them together:
 Reads work order to determine gluing specifications according to type of glue, thickness of parts, and density and moisture content of wood. Turns controls to adjust position, pressure and speed of feed rollers and clamping units, and to regulate temperature of heating unit and length of curing cycle according to specifications. Starts machine and slides pre-glued parts onto rollers that carry them through machine and curing tunnel.

May tend machine that cures glue between wooden parts by electronic heating and be designated accordingly,
 Gluing-Machine Tender, Electronic(woodworking)

8541-142 CASE FITTER(furn.) DPT:684
 GED: 3 SVP: 3 EC: 1 PA: M 3 4 7

Fits doors, trays, shelves and drawers into unfinished wooden furniture and display cases:
 Trims and shapes edges of uneven or improperly fitted parts using chisel, file, sandpaper, or hand plane or by drawing edge over jointer blade. Pushes thumbtacks or inserts plastic into drawer slides to level drawers and to facilitate sliding. Fits prehung doors to cases and marks and drills holes for insertion of screws, using portable electric drill. Attaches doors to cases or sets them aside for painting. Tests fit of drawers by sliding them in and out and tests doors for ease of opening and closing. Installs hardware, such as drawer handles and sliding tracks according to specifications, using hand tools.
 May fit a specific part and be designated accordingly; for example,
 Door Fitter
 Drawer Fitter

8541-146 EDGE BANDER(furn.; woodworking) DPT:684
 GED: 3 SVP: 3 EC: 1 5 PA: M 4 7

Glues veneer strips to edges of cases, tabletops or doors, or to edge of veneer panels used for manufacture of furniture, using one of the following methods:
 1. Sprays or brushes glue on edge of workpiece and applies and positions strip of veneer by hand. Places workpiece in electrically heated clamp and closes clamp to hold veneer strip in place for specified time. 2. Passes strips of veneer over automatic glue spreader and positions glued strip on edge of veneer panel by hand. Places parts in power clamp for specified curing time. Presses pedal to release clamp, examines work to ensure conformance to specifications and removes edged panels to designated area. 3. Places stack of veneer strips in feed chutes of automatic banding machine and adjusts conveyor to width of panel to be banded. Feeds panels into machine that applies glue to edges, pulls veneer strip from feed chute onto panel edge, and dries glue on electrically heated or cold pressure plates. Regulates speed of belts that convey panels through machine.
 May mix glue and refill glue reservoirs. May trim or smooth glued joint and edges, using hand router, file and sandpaper. May match colours and patterns of veneer strips to workpiece.

8541-150 FURNITURE ASSEMBLER(furn.) DPT:684
 GED: 2 SVP: 4 EC: 1 5 PA: M 3 4 7

Assembles and fastens together wooden furniture parts or assemblies to form sections, frames, or complete articles of furniture, performing any combination of the following duties:
 Trims joints to fit, using hand tools. Applies glue to joints, using brush, and knocks parts or assemblies together, using mallet. Places assembled parts in clamp or assembly jig until glue has dried and reinforces joints with dowels, screws, staples or nails, using power screwdriver, staple gun or hammer. Attaches glue blocks, corner blocks, drawer glides, tops, moulding, shelves and dust bottoms with nails, screws, glue or staples. Drills holes and attaches parts of automatic drawer locks, hinges, pulls and casters. Fastens arms, legs or back pieces to furniture, using screwdriver.
 May be concerned with assembly of a particular product and be designated accordingly; for example,
 Bed Assembler
 Box-Spring-Frame Assembler
 Studio-Couch-Frame Assembler

8541-154 ASSEMBLER, SASH AND DOOR(woodworking) DPT:684
 knock-up man.
 GED: 2 SVP: 3 EC: 1 PA: M 4 7

Assembles wood products having mortise-and-tenon or dowelled joints, such as doors, door frames and window sashes, using glue and maul or mallet:
 Brushes glue on tenons or dowels and into mortises on dowel holes. Places wood parts on work table or in assembly jig, according to specified pattern and sequence, and drives tenons or dowels of parts into mortises or dowel holes of adjacent parts, using maul or mallet. Inserts mullions between stiles and rails of multipane windows and

fastens them with glue. Inserts wedges into mortises to fasten parts together. Stacks completed items on pallet or in designated area for clamping or further processing.

May adjust spacing of glue-discharge pipes that inject glue into several dowel holes simultaneously. May operate clamping machine to squeeze tenons or dowels into mortises or dowel holes.

8541-156 CABINET ASSEMBLER(furn.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: M 3 4 7

Assembles wooden cabinets or cabinet frames, using hand tools:

Fits prefabricated parts together. Inserts screws or dowels in pre-drilled holes and fastens parts together, using screwdriver, glue, and clamps. Installs hardware, such as hinges, catches and knobs on assembled cabinet, using hand tools.

May trim wooden parts to ensure tight fit, using sandpaper, chisel or file.

8541-158 FURNITURE CANER(furn.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Installs or replaces prewoven panels of synthetic or natural cane or rattan in furniture; such as, chairs, headboards, doors or cabinets:

Cuts damaged cane or rattan from furniture frame, using knife. Removes wooden splines from grooves in frame, using chisel. Places frame in water, or runs water into grooves, to soften dried glue and adhering cane or rattan, using hose. Scrapes surfaces clean, using knife. Brushes glue into grooves and stretches water-soaked panel of cane or rattan over frame opening. Hammers edges of panel into grooves, using wedge and mallet. Brushes glue into grooves over panel and taps or presses splines into grooves. Trims excess cane or rattan, using knife.

May operate hydraulic press to force panel into frame opening.

8541-162 LAMINATOR, HAND(furn.) DPT:684
GED: 2 SVP: 3 EC: 1 7 PA: M 4

Cements pre-cut covering materials, such as laminated plastic or linoleum, to plywood panels to form furniture parts, such as tops for cabinets, counters, tables and desks:

Applies adhesive, such as glue or cement, to surface of panel, using brush or sprayer. Positions covering material on adhesive-coated work surface. Smooths and presses covering onto surface, using hand roller or wooden block. Removes excess adhesive by wiping work surface with solvent, such as acetone. Trims and smooths edges of material, using file, hand router or electric trimmer. Cleans and polishes finished surface, using air hose, cloth and liquid cleaner.

May place covered panel in vise or attach clamps to hold covering material in place until adhesive sets.

8541-166 PATCHER, DOOR(woodworking) DPT:684
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Repairs defects in wooden doors, using hand tools:

Places door on worktable and cuts defective work, such as pitch pockets, knots, and cracks from door, using knife, chisel, rabbet plane, or portable saw. Selects wooden patch of matching grain and shapes and trims patch to fit cut out area, using knife. Glues patch in cut and applies heat to patch to set glue, using electric iron. Smooths patch, using sanding block or portable sander. Tapes or tacks edges of patch to hold patch to door until glue sets. Smooths plastic wood into cracks around patch, using putty knife. Brushes water on dents in door to raise grain and dries and smooths wood, using hot iron and sandpaper.

May cut and set shims in finished wood stock, such as door rails where defects have been cut out, by tapping glue-covered shim into place.

8541-170 PICTURE-FRAME ASSEMBLER(furn.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles pre-cut pieces of moulding to make picture frames, using one of the following methods:

1. Determines location, size and angle of nail holes to be drilled. Bore partial holes in one end of each piece of moulding, using electric drill. Clamps piece in vise and brushes glue on mitred ends. Fits frame together in vise and drives nails through pre-drilled holes, using hammer. Sets nails, using hammer and nail set. 2. Butts mitred pieces of moulding together in V-shaped holding fixture and drives staple across joint, using hand-held staple gun or holds joint under ram of

automatic stapling machine. Repeats operation on each joint to assemble picture frame.

8541-174 HDYRAULIC-PRESS TENDER(furn.) DPT:685
cold-press tender.
GED: 2 SVP: 3 EC: 1 PA: H 4

Tends hydraulic press that cures adhesive binder in veneered products, such as tabletops and veneered doors:

Places clamp rails and backing board in press. Loads layers of assembled items from conveyor or hand truck into press by hand or by use of hoist. Places backing board and clamp rails on top of stack. Turns hand wheels to set pressure specified for material and pushes button to start press. Attaches retainer rods to top and bottom clamp rails and tightens turnbuckles on rods to maintain pressure on stack after removal from press. Releases press by turning hand wheel and pressing button and removes clamped stack from press bed for drying.

8541-178 LAMINATING-PRESS TENDER(furn.; DPT:685
woodworking)
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends hydraulic press and adhesive-spreading machine to laminate sheets of pre-cut plastic or paperboard to plywood or similar backing to form furniture parts, such as tops for cabinets and tables, or to produce laminated panels for manufacture of such products as packing trunks:

Assembles and stacks selected materials on work table. Feeds sheet of material or backing into machine that coats it with glue or cement. Assembles adhesive-coated plywood, fibreboard, paperboard or plastic in specified sequence for laminating. Wipes excess adhesive from exposed surfaces, using cloth moistened with water or solvent. Sets press for specified temperature or pressure by adjusting controls. Places materials to be laminated in bed of press, either singly or in piles, and moves lever to close press for prescribed period. Lifts laminated materials from press and examines for imperfect bonding. Trims excess material from edges, using knife or electric trimmer. Stacks finished materials in designated area.

May keep production records. May clean and maintain adhesive-spreading machine, using wrenches, brushes and solvents. May be concerned with a particular type of press, material, or product and be designated accordingly; for example,

Hot-Press Tender(furn.)
Plastic Laminator(furn.)
Table-Top Laminator(furn.)
Trunk-Panel Finisher(woodworking)

8541-182 CHAIR LEVELER(furn.) DPT:687
GED: 2 SVP: 3 EC: 1 5 PA: M 4 7

Levels wooden chairs by cutting excess length from legs:

Lifts chair on frame from conveyor or dolly and places it on level bench to determine if chair will rock. Slides uneven chairs over circular saw, set flush with top of bench, to cut excess length from legs. Stacks chairs in designated area for further processing.

May inspect chair for defects, such as cracks or splits or for imperfect finish, and mark defects for repair.

8541-190 HARDWARE INSTALLER(furn.; woodworking) DPT:684
mounter.
GED: 2 SVP: 2 EC: 1 PA: L 3 4

Installs metal trimmings and hardware on finished furniture:

Screws hardware, such as drawer pulls, locks, latches, and metal ornaments to finished furniture, using hand tools and power or ratchet screwdrivers. Inserts felt-back-metal clips between drawers and case to hold drawers during shipment. Wraps keys, trays, and drawer dividers in paper and places them inside cabinet. Hangs doors by screwing hinges into predrilled holes.

8541-194 BANDING-MACHINE TENDER(furn.) DPT:685
edger, table top.
GED: 2 SVP: 2 EC: 1 5 PA: M 3 4

Tends machine that wraps band of metal or plastic moulding around edges of table tops:

Positions table top in rotary bed of machine and moves lever to lower

ram that holds table top in place. Inserts shank or lip of moulding of specified shape and colour into grooved edge of table top. Starts rotation of machine that presses table top against rollers to force band of moulding into grooves. Lifts finished table top from machine. May hold or rotate table top manually against pressure rollers to band edges. May seat moulding manually by tapping band into grooves, using rubber mallet. May band edges of counter and desk tops with moulding.

8541-198 CLAMPING-MACHINE TENDER(furn.;
woodworking) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that clamps pre-glued parts together to assemble products, such as furniture and door frames:
Starts machine and places pre-cut wooden parts in specified order and position on table or in jig or clamping machine. Depresses pedal to activate mechanism that clamps parts together. Releases clamp pressure and stacks assembled products in designated area. Adjusts machine according to dimensions of parts to be processed, by turning hand wheels and setting guides.
May squirt glue into dowel or tenon holes or brush glue on parts before clamping. May fasten clamped parts together by driving nails or screws, using hand tools.

8541-202 DOWELLING-MACHINE TENDER(woodworking)
DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that glues and drives dowel pins into holes in parts of wooden articles preparatory to assembly:
Positions stops on machine to align dowels with pre-drilled holes in wooden parts. Dumps dowel pins into hopper and pours glue into reservoir of dowelling machine. Starts machine by pressing button. Positions wooden parts against stops and depresses pedal to apply glue and drive dowels into holes. Releases pedal and removes dowelled part from machine. Cleans and lubricates machine, using compressed- air blower, brush, cloth, grease gun and oil can.
May mix glue.

8541-206 LAG-BOLT-MACHINE TENDER(furn.) DPT:685
GED: 2 SVP: 2 EC: 1 S 7 PA: L 4 7

Tends machine that screws lag bolt into pre-drilled hole in table leg:
Inserts lag bolt in chuck of machine. Adjusts machine to automatically release lag bolt when required depth of penetration in table leg is reached. Starts machine and pushes table leg against rotating lag bolt. Measures depth of penetration of lag bolt, using gauge, to verify machine adjustment and conformance to specifications.
May tend bench-mounted electric drill that turns lag bolts into pre-drilled holes in table legs.

8541-210 ASSEMBLER, WOODENWARE(furn.;
woodworking) DPT:687
GED: 2 SVP: 2 EC: 1 PA: M 3 4 7

Assembles articles; such as, coat hangers, towel racks, ladders, stools, benches, desks, and solid or folding chairs, from prefabricated wooden parts, by performing any combination of the following duties:
Places prefabricated wooden parts in holding jig or on table of press-fitting machine. Applies glue to parts, using brush or by holding parts against revolving glue wheel. Fits parts together by hand and secures them with clamps, staples, nails, bolts or screws, as specified, using hand tools, or depresses pedal of machine to press-fit glued parts together. Inserts reinforcing rods through pre-drilled holes and secures rods with nuts, using wrench.

8541-214 SANDER, HAND(furn.) DPT:687
GED: 2 SVP: 2 EC: 1 7 PA: L 4

Smooths surfaces of wooden articles, using sandpaper or steel wool:
Smooths surfaces of wooden articles, such as furniture parts, mirror and picture frames, chairs and other small pieces of furniture by hand, preparatory to finishing or between finish coats, using sandpaper or steel wool.
May work on a particular phase of the sanding process and be designated accordingly.

Finish Sander

8541-218 DOOR LAY-UP MAN(woodworking) DPT:687
GED: 2 SVP: 2 EC: 1 PA: M 4

Assembles hollow-core or solid-core doors from preassembled cores and cut-to-size parts, working as member of team:
Inserts hollow or solid door cores between glue rollers that coat both sides with glue. Alternately stacks glued cores on press dolly between pairs of face sheets (veneer panels) to complete doors. Positions lock blocks, cross sticks and spacers within frame of hollow cores. Pushes dolly loaded with doors into press.

8546-INSPECTING AND GRADING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, WOOD PRODUCTS

This unit group includes occupations in inspecting and grading work, as described under the term titles, 02-170 INSPECTOR (any ind.) and 02-150 GRADER (any ind.), concerned with quality control activities in the fabrication, assembly and repair of wood products.

8546-110 GRADER, SMOKING PIPE(misc. prod. fab., n.e.c.)
DPT:287
GED: 3 SVP: 7 EC: 1 PA: S 4 7

Inspects and evaluates finished smoking pipes to establish selling price:
Handles pipe and evaluates factors; such as, weight in relation to size, hardness, straightness and closeness of grain, balance, proportion and symmetry of pipe and bit, carving and burling of bowl for pleasing effect, and uniformity and depth of colour. Assigns grade to pipe. Stamps pipes according to grade and style, using dies and hand-operated press. Places pipes in storage trays according to style, size and grade. Marks and returns rejected pipes for reprocessing.
May grade rough-machined briar bowls to determine quality of briar and be designated accordingly,
Briar Grader

8546-114 STAVE INSPECTOR(woodworking) DPT:687
GED: 2 SVP: 4 EC: 1 PA: L 4 7

Inspects barrel staves after they have been jointed:
Examines bilge (curvature) of jointed staves and rejects those not conforming to specifications. Examines and rejects staves containing defects, such as knots, worm holes, and checks. Arranges and fits number of staves between stops of matching rack, the distance between stops being equal to the circumference of barrel. Ties staves in bundles.

8546-118 PANEL MATCHER(furn.) DPT:687
lay-up man.
GED: 2 SVP: 4 EC: 1 PA: M 4 7

Selects boards and assembles panels of specified grain, colour, and width for use in furniture manufacturing:
Examines boards and selects sides with matching grain and colour for panel surface. Assembles matched boards on table or conveyor, in sequence, and marks them for reassembly in gluing machine, using pencil or crayon.

8546-122 BOX INSPECTOR(woodworking) DPT:667
GED: 2 SVP: 3 EC: 1 6 PA: L 4 7

Inspects wooden bores, crates or wirebound box blanks to ensure quality and adherence to specifications:
Inspects partially or completely assembled products for defects; such as, cracks, nicks, holes, diagonally driven and protruding nails, and misplaced, missing or broken wiring. Places seriously defective product on conveyor for repair by other workers. Notifies workers of defective processing or assembly.
May make minor repairs to product on production line, such as removing or driving nails, bending back protruding wires, or hand sanding rough spots and edges.

**8546-199 OTHER INSPECTING AND GRADING
OCCUPATIONS, WOOD PRODUCTS**

This group includes wood products inspectors and graders, not elsewhere classified; for example, those who feel and examine products to detect defects, verify size and alignment of sash and doors, open and close doors and drawers on assembled furniture to verify smoothness of action, and verify laminated beams for conformance to specifications. Typical examples of occupational titles covered by this residual group definition are:

Inspector, Assembled Furniture(furn.)
Inspector, Furniture Parts(furn.)
Inspector, Laminated Beams(woodworking)
Inspector, Sash and Door(woodworking)

**8548-OCCUPATIONS IN LABOURING AND OTHER
ELEMENTAL WORK: FABRICATING, ASSEMBLING
AND REPAIRING, WOOD PRODUCTS**

This unit group includes occupations in labouring and other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with fabricating, assembling and repairing wood products.

8548-110 COOPERAGE LABOURER(woodworking) DPT:687
GED: 1 SVP: 2 EC: 1 PA: M 4 7

Applies compressed air to barrels containing water to ensure that they are liquid tight:

Pours hot water into barrel, using dipper. Rolls and tumbles barrel to spread water over interior, and inserts air hose and attached bung check valve into bunghole. Admits compressed air into barrel at specified pressure by turning hand valve while observing air pressure gauge. Examines barrel for leakage as revealed by moisture, or air bubbles on surface, and for defects, such as knots or worm holes. Marks position of leaks or defects, using chalk, and sets defective barrels aside for repair by other workers. Rolls barrel over to permit water to drain out and taps bung or plug into bunghole to exclude foreign matter, using hammer. Stencils prescribed information on barrel head, using stencil and paint brush. Lifts and piles barrels on cart or wheelbarrow and removes to designated area for storage

8548-114 LABOURER, BOX FACTORY(woodworking) DPT:687
GED: 1 SVP: 2 EC: 1 PA: M 4 7

Assembles wooden boxes and crates by performing any of the following simple duties:

Taps wooden partitions into grooves of other partitions to subdivide wooden boxes into sections, using hammer. Nails metal reinforcing strips around boxes or in recesses in top, bottom and sides of boxes. Bends projecting binding wire over wood to make wire-bound box blanks easier to handle, using pliers.
May be primarily concerned with a particular activity and be designated accordingly; for example,
Band Nailer
Partition Assembler
Strap Nailer
Wire Bender

8548-118 WIPER(furn.) DPT:687
rubber, wood.
GED: 1 SVP: 2 EC: 1 4 7 PA: L 3 4 7

Rubs and wipes wood filler into furniture and furniture parts:
Spreads filler evenly over the surface of furniture or furniture parts, using cloth, waste or brush. Removes surplus filler, using cloth or waste.
May place rubbed unit on conveyor for drying oven.

8548-122 ANTICHECKING-IRON MAN(woodworking) DPT:887

GED: 1 SVP: 2 EC: 0 PA: H 3 4

Hammers shaped steel bands into ends of timbers and railroad ties to prevent checking (splitting) while seasoning:

Pulls designated ties or timbers from pile, by hand, and hammers steel bands into ends of ties, using sledgehammer. Piles banded ties or timbers for further seasoning.

May clamp, drill hole, and insert bolt or metal dowel through split timbers or ties to hold split parts together. May insert S-shaped band and be designated accordingly,
S-Iron Man

8548-126 CLAMP REMOVER(furn.) DPT:887
GED: 1 SVP: 2 EC: 1 PA: M 3 4

Detaches clamping devices from stack of veneered products, such as tabletops and veneered doors after removal from cold press, working as member of a team:

Loosens turnbuckles, using handle or metal rod, and removes retaining rod attached to rails at top and bottom of stack. Removes top rail from stack and removes and stacks veneer panels and caul boards on separate handtrucks. Pushes truck loaded with veneer panels to drying oven or storage area for drying. Separates layers of veneer with spacer sticks. Scrapes glue from caul boards, and cleans work area, using broom, water hose and scraper.

8548-130 HOGSHEAD ASSEMBLER(woodworking) DPT:887
GED: 1 SVP: 2 EC: 1 PA: H 3 4

Assembles collapsible hogsheads from prefabricated mats (staves wired together), hoops and headings, performing any combination of following duties:

Stands mat on end or positions mat around circular form to make shell. Fastens shell by inserting tie wire between loops of mats and twisting ends together, using hand tool, or by aligning hinges attached to hoops and inserting metal pin through hinge. Positions header in hogshead shell. Encircles bottom of hogshead with metal band and inserts ends of band in strapping tool. Pumps handle of tool to tighten bands around shell, or places hoops around hogshead, using hammer. Breaks or cuts surplus ends of bands, using hatchet, and drives nails through holes in band to secure bands to staves.

May fasten precut lengths of wire (hoops) around hogshead to secure staves, and be designated accordingly,
Hogshead Hooper

8548-134 BAND NAILER(sawmill) DPT:887
GED: 1 SVP: 1 EC: 1 PA: L 4

Makes shingle bands used for binding bundles of packed shingles:

Nails or staples wooden sticks and metal strips together to form shingle bands, using hammer or staple gun.

May stencil identifying information on bound bundles. May pile bundles on conveyor, platform, or in truck.

8548-138 BARREL-STAVE LEVELER(woodworking) DPT:887
leveler man.
GED: 1 SVP: 1 EC: 1 PA: H 4

Evens ends of staves of partly assembled barrels or kegs:

Lifts partly assembled barrel or keg and drops it end down on floor to even ends of staves. Hammers temporary hoops around barrel or keg to facilitate complete assembly of container.

**8548-199 MISCELLANEOUS OCCUPATIONS IN
LABOURING AND OTHER ELEMENTAL
WORK, WOOD PRODUCTS**

This group includes wood products labourers and other elemental workers, not elsewhere classified; for example, those who fill defects in the surfaces of smoking pipes, or split hickory logs into billets used to manufacture lacrosse sticks. Typical examples of occupational titles covered by this residual group definition are:

Hickory Splitter(sport. & toy)
Smoking-Pipe Patcher(misc. prod. fab., n.e.c.)

**8549-FABRICATING, ASSEMBLING AND REPAIRING
OCCUPATIONS, WOOD PRODUCTS, N.E.C.**

This unit group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing wooden products; such as, barrels, tanks, buckets, caskets, boxes, stringed and fretted musical instruments, household and sporting goods, fabrication and assembly jigs, shoe lasts, and wooden reels for cable and wire. Activities include wood carving, shaping, bending, nailing, fastening and glueing, using a variety of common and special woodworking machines, equipment and hand tools.

**Barrelmaking and Cooperage Occupations
8549-110 through 8549-154**

8549-110 COOPER(woodworking) DPT:661
GED: 3 SVP: 6 EC: 1 PA: M 3 4 7

Repairs wooden barrels by performing any combination of the following duties:

Loops cable around top of barrel and turns handle to compress staves and loosen hoops. Removes defective stave and inserts and aligns new stave, using mallet. Shapes top edge of staves to conform to others, using saw to trim, and spokeshave to bevel inside edge. Cuts croze, using hand crozer. Replaces and tightens hoops. Removes head hoop and pries head out, using cooper's hammer and pry bar. Inserts edge of new head in croze of staves and forces it into place, using heel of hand or mallet. Replaces head hoop. Plugs knotholes and worm holes with wooden plugs. Loosens hoops and forces caulking between staves to repair leaking joints. Directs other workers engaged in barrel building, and repair.

May rebuild entire barrel. May build new barrels, buckets, casks, kegs and tubs, using hand tools. May repair circular wooden tanks by shaping, jointing and fitting boards, using hand and power tools.

**8549-114 SAWYER AND ASSEMBLER, TANK BOTTOM
(woodworking) DPT:362**
GED: 3 SVP: 5 EC: 1 5 PA: M 3 4 5 7

Saws lumber to specified dimensions for bottom and sides of wooden tank and assembles and cuts out tank bottom, using hand and power tools:

Measures, marks and saws lumber to specified length for staves and tank bottoms, using carpenter's tools and power saw. Drills matching holes in edges of bottom boards according to specified measurements, inserts dowels into appropriate holes, and knocks boards together to form tank bottom assembly. Directs other workers to position bottom assembly on worktable and operates power saw to cut out circular tank bottom, following scribed line, or adjusts radius of traveling radial-arm saw to cut out a circle of prescribed dimensions.

May operate band saw and revolving turntable that turns bottom assembly against band saw to cut out tank bottom.

8549-118 BARREL ASSEMBLER, MACHINE(woodworking) DPT:682
GED: 3 SVP: 4 EC: 1 3 6 PA: H 4 7

Operates equipment to assemble barrels from components, performing any combination of following duties:

Stems barrel shells (barrels without ends) to make staves pliable, and heats shell over gas burner or in oven to drive off steam. Aligns staves, using vibrating platform and cooper's hammer. Positions shell in hoop driver that forces truss rings (temporary hoops) onto shell to secure staves for cutting. Secures shell in machine and starts shell rotating against cutting heads that cut croze (groove in barrel stave), and trim staves to specified length. Positions shell in truss-pulling machine, and moves lever to remove temporary hoops for installation of barrel end. Positions barrel end in croze of shell and moves lever to start machine that forces end into croze. Installs permanent hoops, using hoop driver. Sands barrel, using belt sander. Drills bung hole in barrel side, using drill press. Inspects barrels for defects.

May be designated according to machine operated or duty performed;

for example,

Croze Cutter

Heater Man

Hoop-Driving-Machine Operator

Leveler
Truss Puller

8549-122 TANK ASSEMBLER(woodworking) DPT:684
GED: 3 SVP: 4 EC: 1 PA: H 4 7

Assembles boards, staves and rods to form tanks:

Arranges boards in shape of tank bottom, and staves to form sides, and marks identification on each piece to facilitate assembling on site. Fits croze (groove) of staves onto bottom pieces and drives in place, using hammer, repeating operation until tank is assembled. Inspects tank for workmanship, and smooths uneven joints, using drawknife. Disassembles pieces for shipment.

May mark location and drill dowel holes in boards or staves. May place and tighten washers, rods and nuts on rectangular tanks, or place metal hoops around staves to withstand pressure. May be designated according to shape or section of tank assembled; for example, Circular-Tank Cooper
Rectangular-Tank Cooper
Tank-Stave Assembler

8549-126 BUCKET CHUCKER(woodworking) DPT:684
GED: 2 SVP: 3 EC: 1 5 PA: L 4

Operates machine that smooths inside surface of bucket:

Places bucket in chuck of machine. Forces bottom of bucket into chuck, using iron bar. Starts machine by pressing button. Depresses pedal to start chuck and bucket rotating. Feeds cutting and smoothing tool into inner surface of bucket to smooth it. Cuts croze near bottom of bucket and trims top and bottom edges, by rotating lever on machine. Stops machine and rubs edge and inside of bucket with sandpaper. Examines bucket for smoothness and removes bucket to designated area for further processing.

8549-130 BUCKET-LATHE OPERATOR(woodworking) DPT:684
bucket turner.
GED: 2 SVP: 3 EC: 1 5 PA: L 4

Operates machine that smooths and finishes outer surfaces of bottomless wooden buckets:

Clamps bucket between chucks of machine to rotate bucket. Shifts lever on tool carriage to feed finishing tool that smooths and finishes outer surface of bucket. Stops feed of tool by moving lever and holds sanding block against surface of rotating bucket to smooth it. Stops machine and examines bucket for defects. Places temporary hoop on bucket and removes it from machine.

May remove assembling ring from bucket, using hammer, before starting bucket-turning machine.

8549-134 BARREL CHARRER(woodworking) DPT:684
GED: 2 SVP: 3 EC: 1 3 7 PA: M 4

Chars interior of barrel shells to prepare them for aging whiskey:

Places barrel shell over lighted gas burner and allows burning to continue for specified period according to depth of char desired. Quenches burning interior, using wet mop, rag, or spray from hose. Chars one side of whiskey barrel headings over fire pot.

May fit charring rings in each end of barrel to protect surface in which croze is to be cut. May cover top end of shell with metal plate to control rate of burning.

8549-138 HOGSHEAD REPAIRMAN(woodworking) DPT:684
GED: 2 SVP: 3 EC: 1 PA: H 3 4

Repairs collapsible hogsheads for reuse as tobacco containers:

Examines hogsheads to determine extent of damage. Removes damaged parts, such as staves or hoops, using hammer or crowbar. Positions and nails precut staves into hogsheads. Encircles hogshead with precut wire hoop and staples hoop to staves. Positions and fastens metal band at top edge of container, using strapping tool or hammer and nails.

May tend band saw to cut headings (covers).

8549-142 HEADING MATCHER AND ASSEMBLER(woodworking) DPT:687
GED: 2 SVP; 2 EC; 1 5 PA; M 4 7

Assembles wooden heading boards to form blank from which barrel head is sawn:
Selects heading boards of correct length and width and arranges them to produce tight fit when assembled. Hammers wooden or metal dowels into one edge of each board and assembles head blank by fitting dowels into dowel holes and knocking boards together, using hammer. Piles assembled heading blanks in designated area for further processing.
May lay strips of flagging along dowelled edges before assembly. May trim and smooth edges of heading boards, using circular saw and jointer. May apply glue to edges of heading boards for assembly by other workers.

8549-146 LEAK HUNTER(woodworking) DPT:584
leak repairman.
GED: 2 SVP; 2 EC; 1 PA; M 2 3 4 7

Detects and repairs leaks in barrels filled with whiskey or wine:
Walks between rows of stacked barrels to examine barrels for leaks, using miner's lamp or flashlight. Repairs leaks by caulking hole with twisted cotton or flax, driving wooden plug into hole, or by applying strip of adhesive canvas over hole. Records serial number of barrel repaired, and date of repair.
May move barrels by pushing barrel manually onto automatic lifter. May work from ladder or scaffolding or climb on stack of barrels to examine or repair them. May look for and repair leaks in wooden tanks containing wine.

8549-150 BARREL RAISER(woodworking) DPT:684
trusser man.
GED: 2 SVP; 2 EC; 1 PA; H 3 4

Assembles wooden barrel shells (barrels without ends) in raising stand (jig):
Places staves inside truss hoop and forming rings to form barrel shell. Loops cable of windlass around top of barrel and moves leg control to draw staves together. Slips truss ring on top of barrel shell and presses pedal to release cable. Removes shell from jig.
May insert truss and forming rings in jig. May place barrels on heat tunnel conveyor.

8549-154 HEADER, BARREL(woodworking) DPT:684
headerman; head setter.
GED: 2 SVP; 2 EC; 1 PA; M 4

Installs head (bottom) in croze (groove) of slack or tight barrels:
Loosens temporary head hoop on barrel or hog'shead by striking hoop with hammer. Picks up head with spiked tool, or by hand, and fits head into croze of barrel. Draws staves around head, using windlass machine, adjustable circular clamp or other equipment. Replaces temporary head hoop with regular head hoop. Taps hoop lightly with hammer to tighten it around barrel and sets barrel aside.
May install bottom in croze of bucket and be designated accordingly, Bucket-Bottom Setter

Boxmaking Occupations 8549-174 through 8549-202

8549-174 CASKET ASSEMBLER(woodworking) DPT:381
GED: 3 SVP; 6 EC; 1 PA; M 4 7

Assembles wooden caskets from preformed panels and mouldings and attaches supplemental hardware:
Fits and assembles sides, ends, bottom and preformed sections of top frame together to form casket body, using hammer, glue, clamping nails, bar clamp, or staples and pneumatic stapling machine. Glues and nails or staples panel board and brace block between sides for reinforcements. Locates and marks mid-point of top frame, using ruler and pencil. Positions template over top edge of casket body or measures with ruler to locate position for hinges and catches. Installs hinges and catches, using screwdriver. Attaches top panel to frame, using screwdriver. Measures, cuts and attaches ornamental moulding or beading to casket, using saw, hammer, stapler, mitre box and ruler.

Sets nail heads, using hammer and nail-set. Fills cracks and holes with wood-filler by hand, or using putty knife. Sands and planes joints and edges, using planer, portable sander or sandpaper to tight fit and smoothness.

May assemble particular part of casket and be designated accordingly; for example,
Moulding Fitter
Panel Fitter
Top-Frame Assembler
Top-Frame Fitter

8549-178 BOX-BLANK-MACHINE OPERATOR(woodworking) DPT:662
GED: 3 SVP; 4 EC; 1 5 PA; L 4

Operates machine to assemble box sections by stapling cleats and wiring boards together:
Adds or removes links from chain-feed belt, and spaces stops and stapling heads, according to dimensions of box, using wrench. Mounts spools of wire on machine or vertical machine spindles and threads ends through stapling heads. Makes sample run to verify machine performance and conformance to specifications. Starts machine, and directs workers engaged in feeding cleats and boards to machine and removing finished product.
May thread binding wire through guides so that staples fasten binding wire to box, and be designated accordingly; for example,
Wire-Bound-Box-Machine Operator

8549-182 BOX MAKER(woodworking) DPT:684
GED: 2 SVP; 3 EC; 1 5 PA; M 3 4

Cuts lumber and assembles cut lumber to make boxes and crates, using hand and power tools:
Measures, marks and saws lumber to specified size, using ruler, pencil and power saws. Assembles box or crate, using hammer and nails, power staples or nailing machine.
May repair damaged containers by replacing wooden parts, using hand and power tools. May salvage used crating by removing nails from boards, using hammer, nail puller or crowbar and by sawing ends, using portable power saw.

8549-186 STAPLING-MACHINE TENDER, BOX END
(woodworking) DPT:685
GED: 2 SVP; 3 EC; 1 5 PA; L 4 7

Tends stapling machine that staples batten down center of wirebound box ends to stiffen and strengthen them:
Starts machine and aligns batten in groove of stapler and positions end board on batten. Moves lever or pedal to move batten and box end under stapler and to staple batten to box end.
May slide batten and box end onto feed belt of machine by hand. May adjust pressure of stapling machine by turning set screw.

8549-190 BOX ASSEMBLER(woodworking) DPT:684
GED: 2 SVP; 2 EC; 1 PA; M 3 4

Assembles wooden boxes, packing and carrying cases, or pallets from prepared sections by performing any combination of the following duties:
Positions workpiece on table, floor, or in nailing jig, and fastens materials together at designated points, using hammer or staple gun. Turns unit over to position and fasten top, bottom, or side panels. Clinches exposed nail heads. Nails battens to box panels or attaches metal cleats or strapping to boxes for reinforcement. Trims and smooths edges of finished box, using hand tools. Assembles lids or trays for boxes. Fits and nails or rivets hardware, such as metal hinges, lock plates and latches to tops and backs of wooden boxes. Stacks boxes in designated area for further processing.

8549-194 LOOPING-MACHINE TENDER(woodworking) DPT:685
wire-turning-machine tender.
GED: 2 SVP; 2 EC; 1 5 6 PA; L 4 7

Tends machine that cuts binding wires between successive wirebound box blanks, forms loops in wire ends, and drives wire tips into wood:
Starts machine by pressing button. Observes box blanks on conveyor to detect uncut wire and to ensure that wire ends have been formed

into loops and wire tips have been driven into wood. Removes boxes from machine.
May repair broken wires, using pliers.

8549-198 BOX-BLANK-MACHINE FEEDER(woodworking) DPT:686
stitcher feeder.
GED: 2 SVP: 2 EC: 1 5 PA: L 3 4

Feeds machine that assembles box sections by stapling cleats to boards or slats and wiring boards together:
Lays cleats against stops of feed belt and places boards or slats over cleats, or loads hoppers of automatic machine with boards and cleats. Assists machine operator to add or remove links from chain feed belt and spaces stops and stapling heads, using hand tools.
May be concerned with a particular activity and be designated accordingly; for example,
Board Layer
Cleat Layer

8549-202 BOX-BLANK FORMER(woodworking) DPT:687
end nailer.
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Fastens ends to wirebound box blanks to form boxes:
Bends wirebound box blank so that sides, top, and bottom are perpendicular. Inserts and fastens sides to cleats by nailing or stapling or by looping wire around cleats. Fastens top to sides by looping wires together.

**Stringed and Fretted Musical Instrument Fabricating
and Repairing Occupations
8549-222 through 8549-226**

8549-222 STRINGED-INSTRUMENT MAKER(misc. prod. fab., n.e.c.) DPT:281
GED: 4 SVP: 8 EC: 1 PA: L 4 6 7

Constructs fretted or bowed musical instruments, such as guitars and violins, applying knowledge of wood properties, instrument design and construction, using hand and power tools:
Selects materials and lays out parts to be cut, using templates. Operates woodworking machines, such as bandsaw, router, fly cutter and drill press to cut, shape, trim and drill wooden parts. Soaks and bends wooden strips over forms to shape instrument rims. Glues wooden parts together to form complete instrument, using jigs, forms and clamps. Cuts and fits frets, using hand tools, and installs parts, such as tuning keys or pegs and trim. Applies varnish or lacquer, using spray gun or brush, and buffs instrument to obtain pleasing finish. Strings instrument and plucks or bows strings to test tonal quality and makes changes to improve tone, if necessary.
May repair, rebuild or restore instruments and bows. May make a particular instrument and be designated accordingly; for example,
Balalaika Maker
Guitar Maker
Mandolin Maker
Violin Maker

8549-226 STRINGED-INSTRUMENT REPAIRMAN(misc. prod. fab., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: 1 PA: L 4 6 7

Repairs, rebuilds or restores fretted or bowed musical instruments, such as guitars and violins, using hand tools:
Inspects and plays instrument to determine defects. Disassembles instrument, using hand tools. Removes cracked or broken sections, using knife. Glues cracked part, places in plaster cast, and clamps cast in hand press. Cuts out broken sections, carves replacement parts and fits replacements to original shape and dimensions of instrument. Reassembles body of instrument, using glue and clamps. Planes fingerboard of bowed instruments and fits tailpiece and pegs. Replaces and fits frets and other parts, using hand tools. Touches up or refinishes wooden parts with paint or lacquer, using spraygun, brush, cloth and buffing wheel. Fits bridge and soundpost of bowed instruments to obtain specified string tension and height. Tunes and plays instrument to assess tonal quality and makes adjustments as necessary. Repairs bows. Replaces skin or plastic heads of banjos.

May repair a particular instrument and be designated accordingly; for example,
Bass-Viol Repairman
Guitar Repairman

**Wood Carving, Shaping and Bending Occupations
8549-246 through 8549-250**

8549-246 WOOD CARVER(furn.; woodworking) DPT:281
GED: 4 SVP: 8 EC: 1 PA: L 4 7

Carves ornamental designs into wooden furniture and other wood products, using hand tools and woodworking machines:
Studies design supplied by customer, architect or design department, or sketches own design, using drawing instruments. Makes full-size pattern and traces design on wood, using carbon paper, stylus and pencil. Secures workpiece in vise. Selects appropriate tool and roughs out design freehand or by cutting along traced lines, using chisel, gouges, mallet, jigsaw and router. Finishes roughed-out design, using chisels, gouges, rasps, and files. Verifies dimensions of carving with measuring instruments.
May stipple design by tapping stippling tool with mallet. May finish carvings roughed out on woodworking machines.

8549-250 SHAPER, HAND(furn.; woodworking) DPT:684
GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Dresses and smooths curved wooden furniture parts to specified contours and finish:
Clamps roughly sawed or shaped part in vise and shapes it to specified contours and finish, using spokeshave, plane, chisels, rasps and power sander.
May shape and smooth wood to make finished wooden articles, such as salad forks, spoons, bowls, and coat hangers.

**Nailing, Fastening and Gluing Occupations
8549-270 through 8549-282**

8549-270 NAILING-MACHINE OPERATOR(furn.; woodworking) DPT:582
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Operates machine that drives nails into boards to fasten assemblies, such as furniture frames, crates, boxes and pallets, or to fasten moulding, scroll-work or overlay panels to wooden stock:
Spaces nail chucks and rails according to specifications and turns setscrews to fasten chucks to rails. Turns handwheel to raise or lower table according to size of pieces to be nailed. Fills hopper with nails and starts machine. Positions boards on table or in nailing jig under chucks and depresses foot pedal to drive nails into boards. Fastens stops and jigs to machine table to facilitate assembly. Piles assemblies in designated area. Maintains production records. Lubricates and cleans machine, using oil can, grease gun and cloths.
May operate nailing machine that cuts own nails from reel of nail wire and be designated accordingly,
Nailing-Machine Operator, Automatic

8549-274 SQUEEZER TENDER(woodworking) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: L 4

Tends machine that squeezes tongue and groove boards together to form box panels:
Adjusts machine for length, width and thickness of finished panel. Starts machine and positions matched boards on feed table from which they are automatically fed into machine that squeezes them together.
May examine and measure tongue and groove to ensure conformance to specifications.

8549-278 CORRUGATED-FASTENER DRIVER(furn.; woodworking) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 4

Tends machine that drives corrugated fasteners across joints to fasten boards together:
Loads hopper with corrugated steel fasteners or lifts spool of

corrugated metal stripping onto machine spindle and threads end between clamps of automatic feeding mechanism. Starts machine and positions boards on table to bring joint under driver head. Depresses pedal to lower ram that forces fastener into boards. May reinforce and repair boards by driving corrugated fastener across split or crack.

8549-282 GLUER, ASSEMBLY-LINE(woodworking) DPT:687
GED: 2 SVP: 2 EC: 1 5 PA: M 4 7

Applies glue to surfaces of wooden pieces and clamps them together to form larger pieces, sub-assemblies or complete units; such as, panels, chair seats, tub bottoms, table tops, and tennis racquets: Spreads glue on surfaces to be joined, using brush or roller or by drawing wood across roller partially submerged in glue. Assembles and aligns pieces by hand and clamps assemblies together until glue dries, using vise or various types of clamps. Reinforces joints with nails, screws, or brads, using hand tools. Glues and nails reinforcing blocks to inside joints of furniture. May place glued pieces in clamps on endless chain carrier for drying and be designated accordingly, Clamp-Carrier Man

**Other Fabricating, Assembling and Repairing Occupations,
Miscellaneous Wood Products
8549-302 through 8549-399**

8549-302 JIG BUILDER(furn.; woodworking) DPT:381
GED: 4 SVP: 6 EC: 1 5 PA: L 3 4 7

Builds jigs used as guides for assembling wooden products such as oversized or special types of box shooks, or furniture parts: Measures and marks lines on parts to be made into jigs, or on worktable to indicate position of stops, according to blueprint, sketch or verbal instructions, using tape measure and chalk. Cuts out jig parts, using power or hand tools. Fastens together jig parts, using hand tools, glue, bolts and screws, or nails stops to work table according to specified markings. May assemble first product of series to verify that jig meets specifications.

8549-306 GOLF-CLUB-HEAD FINISHER, WOOD(sport. & toy) DPT:481
GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Finishes wood golf-club heads as member of an assembly line by performing any combination of the following duties: Installs wood head in fixture of saw and cuts hosel to specified length. Shapes wood and drills shaft to specified length, using belt sander and drilling machine. Cuts slot for face plate, using routing machine. Brushes glue in slot, inserts face plate and places unit in drier for specified time. Shapes face of wood head to specified contours and removes ridges, using belt sander. Cuts recess for sole plate, using routing machine. Weighs head and sole plate and determines amount of lead to be added to assembled unit to conform to standard. Drills hole in sole, brushes in glue and screws in lead weight. Removes excess metal by cutting and sanding and uses cutter to taper hosel. Sands contours and surfaces of head. Dips head of club in stain, and wipes off excess stain. Drills hole in hosel and inserts screw to hold shaft in place. Applies finishing coat by using water, steel wool, priming and sealing solution, lacquer and paint. Places finished product on drying rack. May finish face of club and be designated accordingly, Golf-Club Facer

8549-310 FLASK MAKER, FOUNDRY(iron & steel; non-ferrous metal) DPT:684
GED: 3 SVP: 4 EC: 1 6 PA: M 4 7

Constructs and repairs wooden flasks or boxes used in foundries to make sand moulds: Constructs new flasks by laying out measurements on boards from drawings, or according to dimensions of mould box matchplates. Cuts boards to size with powersaw and prepares them for assembling, using hand and power tools, and woodworking machines. Assembles wooden sections of flask, using glue and screws. Installs fittings, such as steel facing strips, hinges, turnbuckles and guides, using screws,

bolts and hand tools. Repairs flasks by replacing worn and damaged parts.

8549-314 LAST REMODELER(woodworking) DPT:684
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Remodels and repairs outmoded, worn or damaged shoe lasts, by performing any combination of the following duties: Builds up toe area of last by sawing kerfs into specified areas and hammering wedges of last material into kerfs, using hand tools. Saws, files and sands toe of last to specified shape, using hand and power tools. Verifies shape of last, using templates and sole patterns. Replaces worn or damaged hardware and trim on last, using hand tools and powered bench tools. Sands, varnishes and polishes last, using power sander, spray gun or dip tank and power buffer. Paints or stamps identification data or remodeled last. May remodel and repair plastic shoe lasts.

8549-318 LACROSSE-STICK MAKER(sport. & toy) DPT:684
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Fabricates lacrosse-stick frames from wood, using hand tools and powered machines, performing any combination of the following duties: Cuts rough billets to size, using band saw. Trims billet to desired shape, using two-handed draw knife. Steams frame in oven for specified time to facilitate bending. Places frame in form and bends frame to required shape by hand. Drills holes in frame for lacing, using horizontal drill. Clamps frame in vise and carves frame to final shape with draw knife. Finishes surface, using belt sander, and applies varnish or lacquer to finished frame. Cuts laces and gut to required length, using knife. Bundles together required number of frames, laces and gut for lacing. Examines frames at various stages of production for defects, such as knots, cracks, warps or weak spots, and discards defective frames. Packs finished lacrosse sticks in cartons for shipping. May specialize in one of the above duties and be designated accordingly; for example, Band Saw Operator, Lacrosse Sticks Belt Sander, Lacrosse Sticks Bender, Lacrosse Sticks Gouger, Lacrosse Sticks Horizontal Drill Operator, Lacrosse Sticks

8549-322 LAST REPAIRMAN(woodworking) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Repairs wooden shoe lasts by performing any combination of the following duties: Sorts out splintered shoe lasts. Drills holes in splintered areas of last, using electric drill. Brushes glue on wood or fibre pegs and hammers pegs into holes in last. Cuts pegs off at surface of last, using hand or powered saw. Files repaired areas of last to smooth surface. Removes and replaces worn cords or springs that join block and last, using hand tools. Builds up last by gluing patches of leather to designated points. Nails heel plates to last to clinch over tacks driven through upper and insole. Fills tack holes and grooves around bottom of last with plastic wood or putty, using putty knife.

8549-326 WOODEN-REEL ASSEMBLER(woodworking) DPT:684
GED: 2 SVP: 2 EC: 1 7 PA: H 3 4

Fabricates, assembles and repairs wooden reels for winding cables or strands: Cuts lumber according to templates, using portable saw, or measures pre-cut parts selected from storage racks to ensure conformance to specifications, using measuring tape and rule. Bolts, screws or nails pieces together to assemble reel and reel heads. Installs steel or steel and plastic axle core in reel, using hand and power tools. Paints reels with spray gun or paint roller and stencils specifications on sides of reel. Repairs reels or dismantles reels for scrap or salvage. May roll finished reels to storage area or onto floor scales to weigh them. May operate pneumatic press to force core staves into routed slots in reel ends before bolting pieces together. May grease reels to waterproof them.

8549-399 OTHER FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, WOOD PRODUCTS

This group includes wood products fabricating, assembling and repairing workers, not elsewhere classified; for example, those who bend wood into prescribed shapes by steaming and forming, assemble

wooden buckets from staves, and repair wooden boxes rejected during production. Typical examples of occupational titles covered by this residual group definition are:

Box-Blank Repairman(woodworking)
Bucket-Stave Assembler(woodworking)
Setter-Up, Bucket(woodworking)
Wood Bender(furn.; sport. & toy; woodworking)
Wooden-Hoop Maker(woodworking)

855/856-FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS

This minor group includes occupations concerned with fabricating, assembling and repairing textile, fur and leather products such as: garments, headwear, gloves and footwear; house furnishings, drapes and carpets; commercial and industrial products; textile surgical goods; and tentage, sacks, harness and felt goods. These occupations are classified in the following unit groups:

- 8550** Foremen: Fabricating, Assembling and Repairing Occupations, Textile, Fur and Leather Products
- 8551** Patternmaking, Marking and Cutting Occupations: Textile, Fur and Leather Products
- 8553** Tailors and Dressmakers
- 8555** Furriers
- 8557** Milliners, Hat and Cap Makers
- 8561** Shoemaking and Repairing Occupations
- 8562** Upholsterers
- 8563** Sewing Machine Operators, Textile and Similar Materials
- 8566** Inspecting, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
- 8568** Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Textile, Fur and Leather Products
- 8569** Fabricating, Assembling and Repairing Occupations: Textile, Fur and Leather Products, n.e.c.

8550-FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, TEXTILE, FUR AND LEATHER PRODUCTS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in fabricating, assembling, inspecting and repairing textile, fur and leather products.

8550-110 FLOORLADY, MILLINERY(garment & fabric)

DPT:138

Supervises and co-ordinates activities of workers involved in fashioning materials into desired styles, shapes and sizes to make women's hats, (Unit Group 8557):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Interprets design patterns and directs workers in matching, marking, cutting and assembling materials to meet production needs.

May supervise workers engaged in a particular activity and be designated accordingly; for example, Floorlady, Hat Finishers

Floorlady, Hat Makers

8550-114 FOREMAN, DRESSMAKERS(garment & fabric; ret. trade) DPT:138

Supervises and co-ordinates activities of workers engaged in making and repairing women's made-to-measure garments, such as dresses, coats and suits, and in fitting and altering ready-to-wear garments, (Unit Group 8553):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers who are concerned with a particular activity and be designated accordingly; for example, Alterations Supervisor

Foreman, Dressmaking Shop

Foreman, Dress Repair

8550-118 FOREMAN, FURRIERS(fur goods) DPT:138

Supervises and co-ordinates activities of workers engaged in designing, making, altering, re-styling and repairing natural fur garments and accessories, (Unit Group 8555):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Verifies that pelts conform with dressing and dyeing specifications. Sorts, matches and cuts pelts to fill special orders.

May confer with buyers concerning such matters as prices, styles and rush orders. May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Finishing
Foreman, Production
Fur Finisher, Head

8550-122 FOREMAN, HAT AND CAP MAKERS(garment & fabric) DPT:138

Supervises and co-ordinates activities of workers engaged in cutting, assembling, sewing, trimming, and blocking and finishing men's and boy's caps and hats, (Unit Group 8557):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Felt-Finishing Foreman
Foreman, Felt-Hat-Pouncing Department
Foreman, Fur-Hat-Blowing Department
Foreman, Hat Flanging
Foreman, Hat Trimming
Foreman, Straw-Hat Department
Hat-Dye-House Foreman

8550-126 FOREMAN, INSPECTING, GRADING AND SAMPLING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS(any ind.) DPT:138

Supervises and co-ordinates activities of workers engaged in inspecting, grading, sampling and other quality control work in the fabrication, assembly and repair of textile, fur or leather products, (Unit Group 8566):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Sample-Room Foreman(textile)

8550-130 FOREMAN, PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS(garment & fabric) DPT:138

Supervises and co-ordinates activities of workers engaged in making patterns, laying out, marking, cutting or punching textile, fur and leather to make or prepare pieces or parts for products, such as garments, footwear, sails and upholstery, (Unit Group 8551):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Cutting-Department Foreman
Foreman, Lay-Out and Marking

8550-134 FOREMAN, SEWING-MACHINE OPERATORS(garment & fabric) DPT:138 sewing-room foreman.

Supervises and co-ordinates activities of workers engaged in machine-sewing of textiles and similar materials to produce or repair articles; such as, garments, draperies, bedding, carpets, tents and felt goods, (Unit Group 8563):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Examines garment parts or finished articles for defects, such as double or irregular stitches, misaligned parts, variances in colours, untrimmed edges or loose thread ends, and verifies that ornaments and buttons or fasteners are attached to article. Notifies sewing-machine repairman or makes required repairs and adjustments to machines.

May supervise workers engaged in a particular type of sewing activity or in manufacturing a particular product, and be designated accordingly; for example,

Embroidery Foreman
Foreman, Finishing Department
Foreman, Glove Making
Foreman, Jackets
Foreman, Shirts
Foreman, Stitching Department

8550-138 FOREMAN, SHOE MAKING AND REPAIRING OCCUPATIONS(shoes) DPT:138

Supervises and co-ordinates activities of workers engaged in making and repairing leather, and leather-soled fabric-topped footwear, (Unit Group 8561):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Bottoming-Room Foreman
Cutting-Room Foreman
Foreman, Finishing
Foreman, Fitting
Foreman, Lasting
Milling-Room Foreman

8550-142 FOREMAN, TAILORS(garment & fabric; ret. trade) DPT:138

Supervises and co-ordinates activities of workers engaged in making, altering and repairing men's made-to-measure or ready-to-wear garments, and in performing the more difficult tasks in manufacturing men's ready-to-wear clothing, (Unit Group 8553):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers who are concerned with a particular tailoring activity and be designated accordingly; for example,

Foreman, Custom-Tailoring Shop
Garment-Repair Foreman
Men's Alterations Supervisor

8550-146 FOREMAN, UPHOLSTERERS(furn.) DPT:138

Supervises and co-ordinates activities of workers engaged in upholstering, rebuilding and repairing upholstered products, such as chairs, sofas, automobile and aircraft seats, cushions, mattresses and caskets, (Unit Group 8562):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,

Foreman, Covering and Lining
Upholstery-Cutting-and-Sewing Foreman

8550-199 OTHER FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS

This group includes textile, fur and leather product fabricating, assembling and repairing foreman, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in manufacturing canvas goods, assembling luggage or

handbags, or manufacturing textile bags. Typical examples of occupational titles covered by this residual group definition are:
Foreman, Canvas Products(garment & fabric)
Foreman Framing(leather goods)
Foreman, Handbags(leather goods)
Foreman, Luggage Assembly(leather goods)
Foreman, Textile-Bag Manufacturing(garment & fabric)

8551-PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS

This unit group includes occupations concerned with making patterns and laying out, marking, cutting or punching textile, fur and leather to make or prepare pieces or parts for products; such as, garments, footwear, sails and upholstery, prior to assembling, fastening or sewing.

8551-110 LAYOUT-AND-PATTERN MAN, SAIL(garment & fabric) DPT:281
sail-layout man; sailmaker.
GED: 4 SVP: 7 EC: I PA: L 3 4 7

Calculates dimensions and allowances, and lays out pattern of sail employing knowledge of sail-patternmaking techniques:
Analyzes sail requirements for particular type, size and usage of boat. Calculates sail dimensions, using sail-calculation tables. Computes dimensional allowances for hemming and stretching of sail-cloth, and for draft and roach of sail, using sail-specification computer card. Draws full-size pattern of sail on floor, employing knowledge of sail-patternmaking techniques, using chalk, chalk line and measuring tape. Spreads sail-cloth over floor pattern, marks pattern outline on cloth, and cuts into parts for subsequent assembly, using pencil and hand shears.

8551-114 DESIGN-AND-PATTERN MAN, CANVAS GOODS (garment & fabric) DPT:381
GED: 4 SVP: 6 EC: I PA: M 4

Designs and makes patterns for articles such as awnings, boat covers, car seat covers, camper trailer tops, tarpaulins and tents:
Sketches design of articles for customer approval. Draws pattern according to sketches and design specifications, using pattern paper and marking pencil, and employing knowledge of patternmaking techniques. Marks cutting, assembly and sewing lines on pattern according to specifications, using instruments such as calipers, measuring tape, pencils, and straight and curved edges. Cuts out pattern using hand shears.

8551-118 PATTERNMAKER(furn.; garment & fabric) DPT:381
GED: 4 SVP: 6 EC: I PA: L 4 7

Draws sets of master patterns for articles such as garments and upholstery parts, following sketches, sample articles and design specifications:
Examines sketches or sample articles and design specifications to ascertain data such as number, shape, and size of pattern parts and quantity of cloth required to make finished article, using knowledge of manufacturing processes and characteristics of fabrics. Draws outlines of parts on paper, using drafting instruments. Draws details such as position of pleats, pockets, buttonholes and buttons, on outlined parts. Marks outlined garment or upholstery parts with lines and notches that serve as guides in joining parts. Cuts out master patterns, using scissors and knife, or perforates cutting lines to form stencil, using perforating machine. Marks size, identification and style information on patterns.
May sketch and make patterns for specific fabrication process and be designated accordingly; for example, Patternmaker, Embroidery

8551-122 PATTERNMAKER, SHOE(shoes) DPT:381
GED: 4 SVP: 6 EC: I PA: L 4 7

Makes patterns from design specifications for cutting or trimming upper shoe parts and fabricates cutting templates, using one of the following methods:
Examines shoe design specifications and sketches to determine pattern requirements for uppers. 1. Covers sized last with overlapping layers of special material or tape to make form. Draws section, cutting, stitching and ornamental lines on form according to pattern requirements. Removes form from last in two halves, using scissors. Cuts notches in form to facilitate flattening and spreads flattened form onto paper, cardboard or pressboard. 2. Pencils markings of section such as cone, back seam and shank edge onto sized last. Positions paper or special design material on last and trims along markings to make form, using scissors or knife. Spreads form on paper, cardboard or pressboard. Traces outline of form to make master pattern. Draws detail such as stitching and ornamentation according to design specifications, freehand or using drafting instruments. Cuts traced design into individual patterns of upper parts such as quarters, saddles and vamps, using scissors or knife. Makes pattern templates of upper parts from sheet metal for use on pattern grading machine, using tinsmith's hand tools.
May compile manufacturing and costing data from design specifications.

8551-126 PATTERN MODIFIER(garment & fabric) DPT:381
blue-pencil man; doper.
GED: 4 SVP: 6 EC: I PA: L 4 7

Determines variations in style and size of standard patterns to be used in cutting out made-to-measure clothing:
Prepares work order ticket (dope slip) using notations made on ticket by retail establishment worker who recorded customer's measurements and style, and fabric preference. Selects standard patterns to be used in cutting out each article of clothing. Performs elementary arithmetic calculations to determine variations, according to customer specifications, to be made to standard pattern during subsequent pattern marking operation, and makes notations of variations on dope slip.
May mark pattern outline on fabric and be designated accordingly; for example, Doper-and-Marker

8551-130 PATTERN CUTTER(garment & fabric; knit goods) DPT:384
grader; pattern grader.
GED: 3 SVP: 5 EC: I PA: L 4 7

Draws and cuts out sets of patterns for specified ranges of garment sizes increasing or decreasing the grade (dimensions) of master patterns, using either of the following methods:
1. Positions master pattern in clamp of single or multiple grading device and places sheet(s) of paperboard under pattern. Turns knob(s) to set device at specified size(s) and moves master pattern through series of reference points on paperboard. Draws lines between reference points to produce outline of graded pattern(s). 2. Obtains data from charts that specify modifications of master pattern dimensions to produce patterns of various sizes. Positions master pattern on one or more sheets of paperboard and drafts reference points to modify dimensions of master pattern, using drafting instruments. Draws lines between reference points to produce outline of graded pattern. Marks location of notches in graded patterns to serve as guides for joining garment parts. Cuts out graded patterns, using scissors, or knife and rule. Marks garment size, section and style number on each pattern piece.

8551-134 SLIPCOVER CUTTER(garment & fabric) DPT:484
GED: 3 SVP: 4 EC: I PA: L 4 7

Lays out, cuts and fits material for slipcovers according to size and shape of furniture to match patterns and ensure economical use of material:
Reads order to determine type and amount of material required and obtains materials from stockroom. Determines from experience and knowledge of materials approximate yardage necessary to cover furniture, allowing for shrinkage and stitching. Measures, drapes and smooths material over sections of furniture to ensure most economical use and to serve as guide in matching shades, colours and designs in cloth. Determines cutting lines by pinning or marking fabric, using

shape of furniture as outline. Cuts fabric along marked lines. Pins cut pieces together and fits assembled units over furniture, making adjustments with pins to attain required fitting. Wraps fitted pieces together and writes sewing instructions on attached work ticket. Delivers bundle to shop for sewing. Records amount of time spent on each assignment.

May cut material for draperies and be designated accordingly; for example,
Drapery Cutter

8551-138 CUTTER, SHOE PARTS(shoes) DPT:484
leather cutter.
GED: 3 SVP: 4 EC: I PA: L 4 7

Cuts shoe parts from leather or other materials:
Selects material and cutting dies according to specifications on work ticket. Lays material on cutting bed of machine. Positions die on material so that maximum number of shoe parts can be obtained and that grain, finish, and pattern of parts match when assembled. Ensures that parts can be cut to minimize stretch. Pulls stamper over die and pushes handle or pedal to lower stamper onto die and cut parts. Counts parts or observes automatic counter to verify quantity against work ticket specifications. Bundles or boxes parts and marks them with data such as size, style, and cut.

May cut out shoe parts using hand knife. May be designated according to machine operated or shoe part cut; for example,
Clicking-Machine Operator
Hand Cutter
Upper Cutter

8551-142 PATTERN MARKER(any ind.) DPT:684
GED: 3 SVP: 4 EC: I PA: L 4

Arranges patterns and marks outline on cloth, leather, plastic, paper or other materials to facilitate cutting and sewing operations:
Selects sheet or lay of material and patterns according to specifications. Compares pattern with cutting order to verify size- scale, type and amount of material, and number of parts to be cut. Positions pattern on sheet or lay according to type, print, grain or weave of material so that parts match when assembled and waste is minimized, using rules and squares. Outlines patterns on top of materials, using dust bag, crayon, soap or ball-point pen.

May stencil pattern outline on lay, using spray-marking device or perforated pattern and chalk. May notch and mark holes in lay to serve as guides for attachment of other parts, using notcher. May be designated according to part or article marked, or method used; for example,

Marker, Garment(garment & fabric; knit goods)
Marker, Made-to-Measure(garment & fabric)
Marker, Stuffed Toy(sport. & toy)
Stenciller(furn.; garment & fabric)

8551-146 CUTTER, PORTABLE MACHINE(garment & fabric) DPT:684
cloth-cutting-machine operator.
GED: 3 SVP: 4 EC: I PA: L 4 7

Cuts lay of fabric following pattern outline to form parts for articles such as awnings, cloth slippers, cushions, fitted sheets, garments, seat covers and sleeping bags, using portable electric cutter:
Inserts base of portable electric cutter under layers of fabric. Starts, and guides cutter around edges of pattern or along markings on top layer of fabric to cut out parts. Presses control on cutter to engage attached abrasive stone or belt against blade to sharpen when quality of cut indicates dull blade. Changes cutter blades, using screwdriver and wrench.

May spread fabric on table preparatory to cutting. May arrange patterns on top ply of fabric and mark outline of pattern on fabric, using chalk or crayon. May drill holes through layers of fabric parts or cut notches in edges of parts according to pattern on top ply to mark parts for assembly, using electric hand drill and electric cutter. May separate cutting waste according to colour of material. May be designated according to type of portable electric appliance used or article part cut; for example,
Circular-Knife Cutter
Garment Cutter, Machine
Straight-Knife Cutter
Tent Cutter, Machine

8551-150 FELT CUTTER, MACHINE(explosives; garment & fabric) DPT:685
GED: 3 SVP: 4 EC: I 5 PA: M 4

Tends machine to cut non-woven fabric such as felt, filter material and batting into specific shapes, by one of the following methods:

1. Positions dies into automatic die-cutting machine and aligns upper cutting die with surface of bed. Inserts shims between die and bed to set specified gap. Locks dies in place, using wrenches and other hand tools. Mounts rolls of fabric in feed holders, turns knobs to synchronize action of feed rolls with ram, and threads end of fabric through feed rolls and die bed to take-off conveyor. Presses button to start machine, cutting fabric into products; such as, filter cloth, explosive shell wadding, upholstery padding and undercarpeting. Inspects sample cuts to verify conformity to specifications. Observes operation of machine to detect malfunction. 2. Spreads fabric from roll onto cutting table. Measures fabric according to length specifications, using cutting-table graduations of tape measure. Clamps traverse rod across fabric at point where length-cut is to be made. Clamps circular cutting knives to crossbar at measured intervals to cut or trim fabric to specified widths. Presses button to start machine, pulling traverse rod with fabric attached through rotating cutting knives to cut fabric to specified widths. Depresses pedal when traverse rod reaches cutting-off knife to cut widths of fabric to specified length for products such as haircloths and hatter's fur. 3. Staples cardboard pattern on lay of fabric. Pushes lay of fabric against revolving blade of bandsaw on table, cutting around edges of pattern to make felt pads or parts, such as insoles, according to specifications. 4. Lifts and positions stack of fabric sheets onto machine apron. Turns handwheel to adjust feed rollers for accommodation of thickness and width of stacked sheets to be slit, and adjusts feed guide bar for specified strip width. Presses button to start machine. Pushes stacked sheets against guide bar and into feed rollers to cut off individual strips of desired width. Measures width of strips to verify conformance to specifications, using meter and gauges.

May be designated according to machine used or method of cutting; for example,
Band-Saw Tender, Felt Goods(garment & fabric)
Die Cutter, Felt(garment & fabric)
Felt-Slitting-Machine Tender(explosives)

8551-154 MARKER-AND-CUTTER, UPHOLSTERY(furn.) DPT:684
GED: 2 SVP: 4 EC: I PA: L 4 7

Marks and cuts cloth, leather or synthetic fabric into upholstery parts, such as arm rest, back, and cushion cover:

Spreads material in single or multiple layers on cutting table. Positions pattern or stencils pattern outline on lay or sheet of material, following finish, grain or shape of fabric so that parts match when assembled. Cuts fabric around pattern to make parts according to specifications, using shears, electric scissors or portable electric cutter.

May sew upholstery parts together to form completed covers, by hand or using sewing-machine and be designated accordingly; for example,
Marker, Cutter and Sewer, Upholstery

8551-158 SAIL CUTTER(garment & fabric) DPT:684
GED: 2 SVP: 4 EC: I PA: M 3 4 7

Marks and cuts cloth into parts for subsequent sewing into complete sail:

Lays successive widths of sail-cloth to cover floor pattern allowing margin of material to overlap for seams. Marks outline of sail on material following pattern, using pencil. Cuts material along outline to form sail parts, using hand shears. Draws lines across joins of parts as match-guides for assembly, using pencil. Marks and stacks parts in order for machine-assembly. Cuts assembled widths to shape and size of sail, using hand shears. Creases sail edges preparatory to hemming, using fingers or warm iron. Lays out, marks and cuts reinforcing patches for sails to specifications, using pencil, measuring tape and hand shears.

May open seams and cut out defective material to repair sails, using knife and hand shears. May shrink cotton sail-cloth before cutting by soaking in water or by steaming.

8551-162 CUTTER, HAND(any ind.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Cuts single or several layers of textile, leather or fur, following pattern outline, to make parts for articles; such as, tents, drapes, garments, hats and gloves:

Holds textile, leather or fur material securely with hand. Cuts around edges of pattern or along markings on single or top layer of material to make parts according to specifications, using shears, hand-knife or electric scissors. Marks or notches edges of parts, according to pattern, to indicate assembly points, using marking pencil and shears, hand-knife or electric scissors.

May cut damaged part out of article, place part on replacement material as pattern, and cut around pattern to make replacement part, using shears, hand-knife or electric scissors. May be designated according to material, article or part cut; for example, Canvas Cutter, Hand(garment & fabric)

Glove Cutter, Hand(garment & fabric; leather goods)

Leather Cutter, Hand(leather goods)

Mink-Tail Slitter(fur goods)

8551-166 RE-CUTTER(garment & fabric) DPT:684
waste salvager.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Cuts garment parts from salvaged pieces of usable material discarded after cutting operation:

Examines material for defects such as holes, miscuts, and runs. Cuts out defective areas, using hand shears. Positions pattern of garment part on salvaged material and cuts around pattern, using electric knife. Stacks garment parts according to size, style and colour.

8551-170 CUTTER, MALLET-AND-DIE(garment & fabric; leather goods; rubber) DPT:684
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Cuts out parts of articles from materials, such as cloth, leather or rubber, using dies and mallet:

Spreads one or more layers of material on table. Positions specified die on material according to grain, weave or size so that maximum number of parts may be obtained or parts will match when assembled. Strikes die with mallet to force die through material and cut out part.

May be designated according to material cut or article produced; for example,

Die Cutter, Gloves(garment & fabric)

Die Cutter, Rubber(rubber)

8551-174 LAY-OUT-TABLE GIRL(garment & fabric) DPT:684
hem baster.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Measures, trims and pins hems in fabric parts to form articles, such as drapes and bedspreads:

Clamps edge of fabric part to straight edge of layout table and spreads part over table. Measures part to verify that length is according to specifications, using graduated marks of table as a criterion. Cuts part along graduated mark to remove surplus material, using shears. Unclamps fabric from straightedge, folds edges according to specifications and pins them in place to form hems. Presses hems into article, using hand iron.

May hem article, using sewing-machine equipped with hemming attachment.

8551-178 PERFORATOR, PATTERN(garment & fabric) DPT:684
pattern-perforating-machine operator; sketcher.
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Punches designs on paper to form stencils (patterns), using one of the following methods:

1. Inserts needle in holder of electric perforating tool and turns dial to regulate perforating speed. Positions paper on felt pad or cardboard sheet beneath tool. Presses button to start tool. Guides needle over paper following predrawn design to perforate paper and form stencil. 2. Inserts pins into foam rubber pad, following drawings on paper patterns. Positions paper over pins and presses it against pins to perforate paper and form stencil.

May lay out and trace patterns on paper to make stencils. May perforate paper pattern by hand, to form stencil, using pin. May apply powder or paste to perforated stencil to mark material for subsequent embroidering, and be designated accordingly; for example, Stamper and Perforator
Stenciller and Perforator

8551-182 RUG CLIPPER(garment & fabric) DPT:684
carving-machine operator.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Operates powered cutter to trim nap or cut design into articles such as rugs and mats, using one of the following methods:

1. Pushes button to light ultra-violet lamp, positioned over head of machine, that illuminates coloured stencil on back of mat or rug. Depresses pedal to lower rotary cutting head below surface of bed of machine. Positions rug or mat under pressure foot on bed of machine. Releases pedal to raise and rotate cutting head. Guides rug or mat over cutting head to cut design following stencil outline. 2. Guides cutting head of powered hand clipper over surface of woven rug or mat to cut nap to uniform length.

May sew fringe to finished mat or rug, using sewing machine. May guide power cutter over surface of bedspread to cut tufted threads and be designated accordingly; for example, Bedspread Clipper

8551-184 CUTTING-MACHINE TENDER(textile) DPT:585
rotary cutter.
GED: 2 SVP: 3 EC: 1 5 6 PA: H 3 4 7

Tends rotary-shear cutting machine that cuts and folds cloth into specified lengths for making bags:

Reads copy of invoice to ascertain size, type and number of bags to be cut. Places roll of material on brackets at rear of machine. Threads material through machine feed and tension rollers. Adjusts tension rollers to control feed of material into machine. Changes gears, using hand wrenches, or turns dial, to regulate speed of machine. Adjusts bolts on drive wheel of folder, using hand wrench, to ensure correct fold. Starts, controls and stops speed of machine, using hand switch, to cut lengths of material, fold lengths and deposit folded material on catch-bar. Removes folded material from catch-bar and stacks it on hand trucks. Measures cut material with ruler to ensure correctness of fold and length of cut. Replaces empty roll with full roll of material to ensure continuous operation. Reads automatic counter after each run of material and records number of lengths cut. Removes unused portion of roll from brackets and attaches tag to identify material and indicate amount left. Cuts cloth to provide material for sewing odd-size and over-size bags, using knife or portable electric cutter. May take monthly inventory of rolls of material in stock. May be designated according to type of bag cut; for example,

Cotton-Bag-Cutting-Machine Tender
Jute-Bag-Cutting-Machine Tender
Waterproof-Bag-Cutting-Machine Tender

8551-186 BIAS-CUTTING-MACHINE TENDER(knit goods; textile) DPT:685
bias cutter.
GED: 2 SVP: 3 EC: 1 PA: M 4

Tends machine to cut tubular cloth into narrow widths for bias tape or binding:

Positions roll of cloth on shaft, or dolly of flat-folded cloth on stand at feeding end of machine. Places tubes on take up roller. Turns set screw to space circular knives on cutting shaft according to width specified for tape, using rule and wrench. Pulls open end of tubular cloth over arm of machine, under guide bars, through feed rollers and under rotary knives. Laps ends of bias-cut cloth around take-up tubes. Depresses pedal to start, control speed and stop machine, and guides cloth under guide-bars and through feed rollers to cut cloth on bias. Removes rolls of bias tape or binding from machine.

May turn handwheel of valves to admit steam to feed rollers to soften material before cutting. May wrap rolls of bias tape or binding for storage or shipment.

8551-190 LEATHER-STRIPPING-MACHINE TENDER
(leather goods; shoes) DPT:685
stripping-machine tender.
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends machine that cuts leather into strips of specified width for fabrication into articles, such as belts, laces and shoe trimmings: Positions cutters and spacers on arbor at specified intervals and tightens set-screws, using wrench. Inserts leather between machine guides and turns setup screws manually to adjust guides for material accommodation. Depresses pedal to start machine. Guides leather through cutters to cut into strips of specified width. Measures width of cut strips to verify conformity with specifications. Trims imperfections from strips, using scissors or knife.

8551-194 WELT-TRIMMING-MACHINE TENDER(garment & fabric) DPT:685
welt cutter.
GED: 2 SVP: 3 EC: 1 PA: S 4

Tends machine that trims excess welting material from inside edge of hat body or brim: Turns screws to adjust depth of cut of welt-trimming-machine, using screwdriver. Positions edge of hat body or brim against machine guide. Pulls lever to lower pressure foot onto material and hold in place. Depresses pedal to start machine that cuts inside welt of hat body or brim according to specifications. Removes cut welt from inside edge of hat body or brim.

8551-198 CUFF-CUTTING-MACHINE TENDER(knit goods) DPT:685
knit-wrist cutter.
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends one or more automatic cutting machines to cut knit tubing into specified lengths for glove or garment cuffs: Carries spool or carton of knit tubing from storage area to machine. Mounts spool of knit tubing on spindle of machine. Turns screws on machine cams to control speed and motion of cutting blade and feeding mechanism to ensure tubing is cut to specified length, using screwdriver. Threads end of tubing through machine guides and feeder rollers, over spreader arms and under cutting blade. Starts and observes functioning of machine that automatically cuts and folds cuffs. Removes carton of cut and folded cuffs from delivery end of machine. Replaces dull cutting blades, using hand tools.

8551-202 GARMENT NOTCHER(garment & fabric) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that notches and pierces cut garment parts to serve as guides for attachment to other parts: Places garment part over template or against guide on machine bed. Depresses pedal to lower blade that notches or pierces part. May change blade on machine, using hand tools. May be designated according to garment part notched; for example, Sleeve Notcher

8551-204 MARKER, SHOE PARTS(shoes) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that stamps identifying symbols or guide lines on shoe parts: Selects and mounts plates on machine. Inks plates, using brush or pad. Positions and aligns part in guide on machine bed. Depresses pedal to lower inked head that stamps lines or symbols on part. May adjust temperature of heated machine head. May stamp symbols of guide lines on other leather articles. May mark parts by tracing pattern, using pen, pencil or crayon.

8551-206 SCALLOP CUTTER, MACHINE(garment & fabric) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that cuts lengths or belts of embroidered fabric into scalloped strips for use as decorative trimmings: Turns setscrews to raise or lower blade according to thickness of fabric. Places fabric on machine table and aligns prestitched line on

fabric with edge of blade. Sets machine guide according to fabric alignment. Starts machine and observes flow of fabric to detect damage and irregular scalloping as fabric passes under blade. Adjusts height of blade to restore scalloping to specifications. Positions fabric for subsequent runs through machine and repeats process until fabric has been cut into specified number of scalloped strips. May sharpen and insert replacement blade in machine head.

8551-210 STRIP-CUTTING-MACHINE TENDER(textile) DPT:685
slitting-machine tender.
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Tends machine that cuts rolls of textiles or plastic into narrow rolls of specified width: Lifts roll of material onto machine bar and hammers wedge into core of roll or attaches face plates to secure roll to bar. Turns handwheel to move rotary blade into cutting position, following markings on calibrated scale to obtain specified cutting width. Starts machine that rotates blade and roll in opposite directions. Presses hand lever to move rotating blade forward and cut through roll of material. Releases lever and positions blade for subsequent cut. Removes narrow rolls and stacks in handcart or container. May tend machine equipped with device to wind bolts and loosely wound rolls into rolls suitable for subsequent cutting and be designated accordingly; for example, Slitter-and-Rewinder

8551-214 MARKER(garment & fabric; knit goods) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4

Marks position on garment or garment parts for items such as buttons, buttonholes and dome fasteners, and for alignment of parts such as pockets and flaps, using any of the following methods:

1. Measures specified distance from edge or reference marks on garments, using tape measure or rule. Marks positions with chalk, crayon or pencil.
2. Selects spacing gauge according to size of garment and positions gauge on garment. Marks position with chalk or pencil.
3. Positions garment or garment part on table beneath bar of lever-type pinhole marking device. Presses pedal to lower bar that marks with pinholes, reference points for alignment of garment parts.
4. Folds buttonhole edge of garment over button edge and inserts chalk, crayon or pencil to mark position for buttons.
5. Measures on top layer of knit-fabric parts the distance specified for position of other parts, such as pockets and flaps, using fabric edge or pre-marked references as datums. Marks position of corner points of other parts on top layer according to measurements. Passes long needle and chalked-thread through lay of knit-fabric parts at marked positions to transfer corner assembly points onto each layer.
6. Positions lay of garment parts on bed of stitching machine. Depresses hand lever that forces threaded needle downward to draw thread through lay, following pre-marked points on top layer of fabric. Cuts thread between each layer of fabric, leaving thread through each part to serve as guide for attachment or alignment of other parts such as pockets and flaps.

May be designated according to marking objective; for example, Button Marker
Marker, Quarter(garment & fabric)
Marking Stitcher(garment & fabric)
Pocket Marker(knit goods)

8551-299 OTHER PATTERNMAKERS, MARKERS AND CUTTERS, TEXTILE, FUR AND LEATHER PRODUCTS

This group includes patternmakers, markers and cutters not elsewhere classified; for example, those who enlarge embroidery designs, mark and fold pleats, make dies and templates, trim parts to remove defects, and perform other patternmaking, marking, or cutting of textile, fur, or leather. Typical examples of occupational titles covered by this residual group definition are:
Cartoon Enlarger, Embroidery(garment & fabric)
Glove Cutter(garment & fabric)
Patternmaker, Pleat(garment & fabric)

8553-TAILORS AND DRESSMAKERS

This unit group includes occupations concerned with making, altering and repairing complete items of tailored clothing, dresses and other made-to-measure garments, and performing the more difficult tasks in the manufacture of ready-to-wear garments. Occupations concerned with the making, altering and repairing of fur garments are classified in Unit Group 8555, FURRIERS. Occupations concerned with routine machine-sewing operations in the manufacture of garments are classified in Unit Group 8563, SEWING MACHINE OPERATORS, TEXTILE AND SIMILAR MATERIALS.

Tailors

8553-110 through 8553-122

8553-110 TAILOR, MADE-TO-MEASURE GARMENTS(garment & fabric; ret. trade) DPT:261
master tailor.
GED: 4 SVP: 8 EC: 1 PA: L 4 7

Makes men's garments; such as, suits, topcoats, overcoats and other dress clothing, applying knowledge of men's garment design, construction and styling:

Confers with customer to determine type of material to be used, style and design of garment desired. Measures customer for size, using measuring tape, and records measurements for use in preparing patterns. Draws original pattern for garment, or alters existing pattern to fit customer measurements. Applies pattern to fabric with pins, and cuts fabric along outlines of pattern, using shears. Assembles garments, sewing padding to coat fronts, lapels, and collars to give them shape, and bastes garment parts, using needle and thread or sewing machine. Fits basted garment on customer and marks areas requiring alterations, using chalk. Alters garment and joins parts, using needle and thread and sewing machine. Sews buttons and buttonholes to finish garment. Directs activities of other workers in tailoring shop.

8553-114 TAILOR, READY-TO-WEAR GARMENTS(garment & fabric; ret. trade) DPT:381
shop tailor.
GED: 4 SVP: 6 EC: 1 PA: L 4 7

Performs specialized hand-and machine-sewing operations in manufacture of made-to-measure and ready-to-wear clothing, applying knowledge of garment construction and fabrics:

Trims and shapes edges of garment parts according to pattern prior to sewing, and cuts excess material from seam edges, using shears. Fits collar facing to underfacing with pins, trims edge of undercollar with shears, and sews undercollar to collar using sewing machine. Bastes collar and sleeves to coat body, using needle and thread, prior to sewing collar and sleeves with permanent stitches, using sewing machine. Stitches shoulder padding, coat facing and lining together at armhole. Bastes and sews canvas material in various coat parts, such as undercollar, shoulder, and front edge to give garment shape and body. Joins shoulder padding to coat with basting stitches. Sews on buttons, makes buttonholes and presses seams, using steam iron to finish garment.

8553-118 TAILOR, MEN'S GARMENT ALTERATIONS(garment & fabric; ret. trade) DPT:381
GED: 3 SVP: 6 EC: 1 PA: L 4 7

Alters men's clothing, or repairs defective garments, following instructions on alteration or repair tags, or marks on garments, applying basic knowledge of men's clothing:

Examines tag and garment to ascertain necessary alterations. Removes stitches from garment, using hem ripper or razor blade. Shortens, lengthens, or tapers sleeves and legs. Lets out or takes in waist and chest. Raises or lowers collar, and inserts or eliminates padding in shoulders; while maintaining drape and proportions of garment. Trims excess material, using shears. Resews garment, using needle and thread or sewing machine. Repairs or replaces defective parts, such as pockets, pocket flaps, coat linings and other items.

May fit garment on customer to determine required alterations. May press garment, using hand iron or pressing machine.

8553-122 MEN'S GARMENT FITTER(garment & fabric; ret. trade) DPT:364
GED: 3 SVP: 5 EC: 1 PA: L 3 4 7

Fits men's ready-to-wear garments on customer; according to customer's needs and tastes:

Studies garment on customer, and discusses customer style preferences to assure satisfactory fitting. Measures parts of garment such as sleeves and pants, using measuring tape, and marks garment, using chalk and pins to indicate alterations required. Calls out, or writes alteration instructions on alteration tag.

May fit boys' ready-to-wear clothing. May make major or difficult alterations using sewing machine.

Dressmakers

8553-142 through 8553-154

8553-142 DRESSMAKER(garment & fabric; ret. trade) DPT:261
GED: 4 SVP: 8 EC: 1 PA: L 4 7

Makes women's garments; such as, dresses, coats, suits and other dress clothing, applying knowledge of women's garment design, construction and styling:

Confers with customer to determine type of material, pattern or style to be used in making garment. Takes customer's measurements, using tape measure to determine modifications from pattern. Draws original pattern or drafts standard pattern according to measurements of customer and modifies pattern to obtain specified style. Positions and pins pattern sections; such as collar, sleeve, or waist, on fabric, and cuts fabric with scissors following pattern edge. Pins, or bastes fabric parts together in preparation for final sewing. Sews fabric parts together, using single-needle sewing machine to form garment. Sews felling stitch in hem of garment by hand to conceal thread. Presses seams as each section is sewn on, using hand iron, to smooth seams and remove wrinkles. Makes garments according to pictures furnished by customers.

8553-146 SEAMSTRESS(garment & fabric; ret. trade) DPT:381
GED: 4 SVP: 6 EC: 1 PA: L 4 7

Makes, alters and repairs garments such as dresses, coats and uniforms, according to pattern or customer specifications, by hand or machine sewing:

Positions and pins pattern sections on fabric, and cuts fabric with scissors, following pattern outline. Bastes, or pins fabric parts in preparation for final sewing. Joins fabric parts together and sews felling stitch in hem of article. Presses article, using hand iron, to smooth seams and remove wrinkles. Repairs fabric articles, replaces parts and makes alterations such as, patching or darning tears and holes. Replaces worn collars, pockets, and metal closures. Lengthens or shortens garments and alters width of skirts and size of waistband. May keep records of materials used, and issue requisitions to maintain stock. May oil, and change needles on sewing machine. May discuss alterations with customers.

8553-150 SEAMSTRESS, WOMEN'S GARMENT ALTERATIONS(garment & fabric; ret. trade) DPT:381
GED: 3 SVP: 6 EC: 1 PA: L 4 7

Alters women's clothing, or repairs defective garments, following instructions on alteration or repair tags or marks on garments, applying basic knowledge of women's clothing:

Examines tag and garment to ascertain necessary alterations. Removes stitches from garment, using hem ripper or razor blade. Shortens, lengthens, or tapers sleeves or skirt. Lets out or takes in waist and bust. Raises or lowers collar, and inserts or eliminates padding in shoulders, while maintaining drape and proportions of garment. Trims excess material, using shears. Resews garment, using needle and thread or sewing machine. Repairs or replaces defective parts; such as, pockets, pocket flaps, suit and dress linings and other items.

May fit garments on customer to determine required alterations. May press garment, using hand iron or pressing machine.

8553-154 WOMEN'S GARMENT FITTER(garment & fabric; ret. trade) DPT:364
GED: 3 SVP: 5 EC: 1 PA: L 3 4 7

Fits women's ready-to-wear garments on customers, according to customer's needs and tastes:
Studies fit of garment on customer to determine alterations required. Pins altering folds at seams, or darts, to arrive at desired fit. Measures and marks hem to specified length, using measuring tape and chalk. Calls out or records instructions concerning alterations on alteration tag, and attaches tag to garment. Suggests other garments or different styles when it becomes difficult to fit customer.
May assist in altering and pressing garments, using sewing machine and steam iron.

Other Tailors and Dressmakers and Related Occupations 8553-174 through 8553-199

8553-174 COSTUMER(broadcast., motion pic. & stage; garment & fabric) DPT:261
GED: 4 SVP: 7 EC: 1 PA: L 3 4 7

Selects, fabricates and fits costumes to members of cast according to style of period and characters to be portrayed:
Discusses script with production staff, and reviews reference material to determine costumes and accessories required to dress cast according to styles of period and characters to be portrayed in script. Fits wardrobe costumes to members of cast, makes minor alterations and repairs by hand, or uses sewing machine. Cuts, assembles, and sews material to fabricate costumes according to specific patterns or own design.
May buy material for wardrobe specialty items and costumes. May keep inventory of wardrobe contents. May press and spot-clean costumes, using electric iron and cleaning fluid.

8553-178 SAMPLE-GARMENT MAKER(garment & fabric; ret. trade) DPT:381
GED: 3 SVP: 6 EC: 1 PA: L 4 7

Sews sample garments for new designs, according to pattern specifications:
Selects garment parts and threads, according to design specifications. Positions, aligns and sews parts of garment together, using needle and thread or sewing machine, following markings on parts, sketches and patterns. Positions garment on model form, to examine fit and drape. Indicates position of fasteners and trimmings; such as, sashes, belts, buttons and emblems on garments, using chalk.
May mark and cut materials to obtain garment parts, following patterns or designer's sketches. May press garments by hand or machine.

8553-182 CORSETIERE(garment & fabric; ret. trade) DPT:364
corset fitter.
GED: 3 SVP: 5 EC: 1 PA: L 4

Fits and alters made-to-measure foundation garments such as, girdles and corsets, according to customer's measurements and tastes:
Discusses customer's needs to determine type of fitting or garment required. Measures customer's waist and hips, using measuring tape, and records measurements on alteration tag. Pins or marks garment at various points, using chalk or blue pencil to indicate alterations required. Alters length of garment, garters or straps or takes in darts by hand or machine sewing.

8553-186 WARDROBE MISTRESS(broadcast., motion pic. & stage; garment & fabric) DPT:674
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Cares for costumes and wardrobe accessories of theatrical, television or motion picture production cast:
Repairs, alters, and revamps special wardrobe items and accessories; such as, hats and caps, badges, shoes, belts, leather pouches, or other

leather, suede, and canvas items, using hand tools and sewing machine. Examines, cleans, mends, refits and presses costumes as required. Arranges costumes of cast on dress racks in stage appearance sequence, and aids cast members to don complicated costumes to facilitate quick changes. Packs costumes for cast when accompanying show on tour.
May fabricate wardrobe items and accessories.

8553-190 GARMENT MARKER(garment & fabric; ret. trade) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Marks length of pants, slacks, dresses, coats and other garments according to instructions on alteration tags, and cuts off excess material:
Lays garments on table. Consults instructions on alteration tags and measures lengths, using measuring stick. Marks cuff crease, coat or dress and hem lines, using ruler and chalk, and cuts off excess material, using shears.
May specialize in marking specific men's or women's garments and be designated accordingly; for example,
Dress Marker
Pants Marker

8553-199 MISCELLANEOUS TAILORS AND DRESSMAKERS

This group includes tailors and dressmakers, not elsewhere classified; for example, those who specialize in making complete garments, such as shirts, blouses or lingerie. Typical examples of occupational titles covered by this residual group definition are:
Blouse Maker(garment & fabric; ret. trade)
Shirt Maker(garment & fabric; ret. trade)

8555-FURRIERS

This unit group includes occupations concerned with making, altering, restyling and repairing natural fur garments and accessories. Activities include: pattern making, arranging, laying out; blocking, selecting and cutting fur pelts; estimating fur garment repair costs; and sewing fur pieces, linings, fitting, paddings and other parts to make finished fur garments. Occupations concerned with dyeing and tinting fur pelts are classified in Unit Group 8295, HIDE AND PELT PROCESSING OCCUPATIONS.

8555-110 FURRIER, ALL ROUND(fur goods) DPT:261
fur tailor.
GED: 4 SVP: 7 EC: 1 PA: L 4 7

Makes, alters, restyles and repairs fur garments:
Estimates cost of new garments, alterations, renovations and repairs. Selects and modifies patterns for fur garments to suit customer's size, and style preferences. Grades, sorts and matches furs to be used. Cuts furs according to pattern, using fur-cutting knife. Joins furs together, using sewing machine. Lays out, stretches and trims sewn parts to conform to patterns. Assembles and sews together fur parts and lining to produce finished article. Repairs garments by cutting out worn or damaged skins, cutting matching replacement furs to size and sewing in place. Adds or removes skins from garments to change style.
May glaze fur articles, using steam-ironing machine to restore glossy appearance. May supervise activities of workers engaged in one or more of the described operations.

8555-114 FUR CUTTER(fur goods) DPT:381
GED: 3 SVP: 7 EC: 1 PA: S 4 7

Selects and cuts pelts required to make, alter or repair garments or other fur articles:
Selects required number of fur pelts and matches them for size, colour, texture and quality. Arranges pelts on pattern, according to design, colour and quality to achieve best appearance and symmetry. Numbers pelts to indicate their location on pattern. Cuts off unusable parts; such as, heads, necks, sides, rumps and tails. Slits skin of fur into diagonal strips, leaving uncut margin at edge, to obtain specified

length and shape of pelt, using furrier's knife. Cuts and trims pelts to shape them, according to garment patterns.
May direct the sewing of fur pelts or fur strips into garments. May trim blocked furs prior to sewing, by removing excess fur around chalk-marked patterns, using hand knife or scissors, and be designated accordingly,
Fur Trimmer

8555-118 FUR-REPAIR ESTIMATOR(fur goods; ret. trade) DPT:367
GED: 3 SVP: 6 EC: 1 PA: L 4 7

Examines fur garments to determine cost of remodeling or repair: Discusses customers' preferences as to changes in style. Examines garment for frayed linings, worn spots and tears, and determines cost of alterations needed. Marks work ticket to indicate alterations or repairs to be made. Grades and matches furs to be added to garments, according to quality, colour and size, to ensure even appearance of finished garment. Places repairs with outside contractors when work required is beyond scope of firm. Examines remodeled or repaired garments to verify completion of work.

8555-122 FUR FINISHER(fur goods) DPT:684
fur seamstress.
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Assembles complete fur garments, using sewing machine, by performing any combination of the following duties:
Joins strips of fur into let-out pelts or joins pelts into garment parts or garments. Attaches tape to edges of pre-cut fur garment pieces to prevent stretching. Selects pattern according to specifications and cuts lining materials. Sews together lining parts by machine and presses complete garment lining, using iron. Sews interlining and lining to inside of fur garment, by hand or using blind-stitching machine. Stitches padding for cuffs and collars into position and sews on buttons, hooks, fasteners, and monograms. Examines finished garment on dummy for flaws such as puckered stitching and uneven hems.

May repair fur garments by hand and machine. May be concerned with only one phase of garment assembly and be designated accordingly; for example,
Feller
Lining Cutter
Taper

8555-126 FUR BLOCKER(fur goods) DPT:684
fur nailer.
GED: 2 SVP: 4 EC: 1 PA: L 4

Lays out pelts and nails them to pattern outlined on flat surface to stretch and block pelts into desired shape:
Draws chalk outline of paper pattern on board of worktable. Brushes skin side of fur with water to dampen it. Positions, stretches, and shapes pelt, skin side up, according to pattern outline and nails or staples it to board. Allows furs to dry in stretched position for setting and removes nails or staples.
May rip old fur garments into strips to salvage skins, using hand knife.

8557-MILLINERS, HAT AND CAP MAKERS

This unit group includes occupations concerned with fashioning and making hats, caps and related accessories. Activities include: designing, laying out, cutting, piecing, sewing, forming and pressing textile, fur, felt, leather and other materials into desired styles, shapes and sizes.

8557-110 MILLINER(ret. trade) DPT:261
millinery maker; women's hat maker.
GED: 4 SVP: 7 EC: 1 PA: L 4 7

Fabricates women's hats completely, to customer specifications or for stock, from materials; such as, straw, felt, fabric and fur:
Marks out and cuts patterns to desired size and shape based on original or existing designs, or according to customer specifications. Lays pattern on hat material, and cuts material following pattern and

using scissors. Shapes, wires, sews, glues and blocks material, using hat forms, needle and thread, sewing machine, steamer and hand iron. Sprays sizing solution onto hats to stiffen them as required. Sews lining, ribbon, veil, flowers, feathers and other trimmings to hat. Alters stock hats to customer's wishes by changing shape, ornaments or trimmings.
May shape and trim pre-fabricated hat bodies to make hats. May renovate hats. May display, fit and sell hats and accessories.

8557-114 HAT MAKER, FACTORY(garment & fabric) DPT:684
assembler, hats; draper, hats.
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Assembles women's hats in millinery factory by folding, draping, pinning and sewing material, trimmings and pre-sewn hat parts to unfinished hat bodies or hat frames, following specifications or sample hat:
Fits hat body or frame onto block to secure it for assembly. Folds, twists and drapes material, such as, satin, silk or velvet, around crown and brim to shape and decorate hat. Pins material in place. Sews parts, such as brim and trimmings, to hat body or frame, using needle and thread.
May cut, tie, glue or sew cloth or ribbon, to form trimmings, such as bows and artificial flowers. May glue trimmings to hat, using brush.

8557-118 HAT FINISHER, FELT(garment & fabric) DPT:684
slicker.
GED: 2 SVP: 4 EC: 1 PA: L 4 7

Finishes felt hats, by any combination of the following methods:
1. Selects hat block according to specifications and clamps to turntable. Fits hat over block and depresses pedal to start turntable rotating. Rubs exterior surface of hat with sandpaper to remove excess fibres and impart smooth finish. Feels surface of hat to ascertain when specified texture has been attained. Removes hat from block and places aside for further processing. 2. Fits hat over hat block and holds over steam jet to moisten felt. Passes hat over gas flame to singe off protruding hairs and fibres without damaging felt. Removes hat from block. 3. Removes dust, lint and loose fibres from hat surface, using hand brush or air hose. Fits hat over hat block on turntable. Applies wax or grease to lure (cloth pad) and rubs pad on hot plate to heat pad and wax. Depresses pedal to start turntable rotating, and rubs surface of hat with lure to smooth and finish surface. Removes hat from block when specified finish has been attained. 4. Fits hat over hat block and dampens brim, using sponge. Covers hat with damp cloth, and presses top of brim to smooth and shape it, using hand iron. Removes hat from block, places hat, crown down, into recessed hat form and presses underside of brim. Removes hat from form and examines it for smoothness of finish.

8557-122 HAT BLOCKER, HAND(garment & fabric) DPT:684
GED: 2 SVP: 3 EC: 1 3 4 PA: L 4

Blocks hats, hat bodies or caps to specified size and shape, by hand or using electric iron:
Places article in steam cabinet, or holds article over steam jet, to soften it prior to blocking. Positions article over heated block and presses, pulls or rubs article to smooth it and impart specified size and shape, by hand or using iron. Removes article from block, and places on rack or in drying cabinet.
May form brims on hats, by tying cord around body near base, and turning edge of body over cord. May cover article with damp cloth to protect it during blocking operation.

8557-126 HAT-BRIM CURLER(garment & fabric) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Curls, shapes and smoothes hat brims, by either of the following methods:
1. Adjusts temperature of special curling iron according to type of hat material to be pressed. Moistens hat brim, using sponge, and positions hat on worktable, with brim extending over edge. Curls, shapes and smoothes brim, using curling iron. Inverts hat on table and shapes underside of brim, on hats requiring partially reversed brims. Removes excess welt from hat brims, using special razor-blade hand tool. 2. Tends machines that curl, shape and smooth hat brims. Moistens hat brim, using sponge. Depresses pedal to open feeding rollers of

curling machine, and positions hat brim between rollers. Releases pedal to close rollers, and moves lever to start machine. Removes hats from machines at end of curling cycles.

May cut hat brims to specified width, or remove excess material, using rounding jack or machine. May be designated according to method used; for example, Curling-Machine Operator
Hand Curler

8557-130 HAT-CONE SHRINKER(garment & fabric)

DPT:684

GED: 2 SVP: 3 EC: I 4 5 PA: L 4

Dampens, folds and feeds felt hat cones into roller machines that squeeze fibres together, to harden and shrink cones preparatory to further processing:

Dampens felt hat cones to soften fibres by immersion or sprinkling with water. Folds cones in prescribed manner. Wraps cones in burlap or woolen cloth during initial processing stages to protect fibres. Squeezes out excess water with hands. Feeds bundle of cones into machine rollers to squeeze fibres, or places flat cones on conveyor belt that moves cones beneath water sprinkler pipes, between rollers and onto second belt that returns cones to worker. Measures cones, using ruler. Repeats process until cones have hardened and shrunk to size specified. Inspects cones and works fibres into thin spots, using fingers, to repair damaged cones.

May be designated according to processing stage or machine fed (as cones pass through several hardening and shrinking operations); for example,

'A' Machine Operator
Hardener
 Starter

8557-134 HAT-DECORATION MAKER(garment & fabric)

DPT:684

trimming maker.

GED: 2 SVP: 3 EC: I PA: S 4 7

Prepares decorations and trimmings for hats or millinery from ribbons, feathers, cloth and other materials:

Measures and cuts material, using ruler and scissors or cutting machine. Folds and sews parts together by hand to make bows, rosettes and other items. Cements coloured bird feathers or artificial flowers to forms to make decorations. Strings or sews coloured beads, or folds and shapes cloth-covered wire to make ornaments.

8557-138 HAT DECORATOR(garment & fabric)

DPT:684

GED: 2 SVP: 3 EC: I PA: L 4 7

Attaches decorations and trimmings to hats, caps or millinery, by performing any combination of the following duties:

Pins, sews or glues trimmings, such as flowers, ribbons and feathers, to article, using needle and thread or brush, and following sample or specifications. Inserts, laces and ties trimming material, such as leather and nylon, through precut slots or holes in hat brim or crown. Attaches buttons, snaps, chin straps, braid and ornamental bands to caps, using needle and thread, or hand or kick press. Sews or glues hat size or code labels inside hats or caps.

May be designated according to specific duty performed or article decorated; for example,

Cap Trimmer
Hat Lacer
Hat Trimmer

8557-142 HAT-FOUNDATION MAKER(garment & fabric)

DPT:684

GED: 2 SVP: 3 EC: I PA: L 4 7

Makes foundations that provide form and shape for hats, caps or millinery, by performing any combination of the following duties:

Measures and cuts wire or plastic band to specified length, using ruler and foot-operated cutting machine. Bends wire or plastic band to form circle, and fastens ends together with metal clip or staples, using crimping or stapling machine. Fits formed circle inside hat or cap to give article required shape. Positions formed circle, buckram, cardboard or cotton between layers of fabric, and sews fabric together to make foundations, using sewing machine.

May brush paste on cap-visor linings, and apply fabric or plastic covering to linings, to make cap visors.

8557-146 HAT BLOCKER, MACHINE(garment & fabric)

DPT:685

blocking-machine operator.

GED: 2 SVP: 3 EC: I 3 4 PA: L 4

Tends one or more machines that stretch or press hat bodies or hat-body material to specified size and shape, by one of the following methods:

1. Places felt hat body in container of hot water, or on rack in steam cabinet, to soften body prior to blocking. Pulls softened body onto hat block and positions block on holding device in machine bed, or places body directly on lower hat form in machine. Pulls upper hat form down onto hat body. Moves lever or turns knob to close machine fingers that grasp rough-formed brim on body and pull brim outward, to stretch and shape brim. Moves lever to activate ram that forces block or lower form upward into body, to shape crown. Depresses pedal or turns valve to spray water or air through hat body to stiffen it. Releases levers or turns knobs, raises upper hat form, and removes hat from machine. Places hat in tank of cold water to chill hat and set shape. 2. Dampens sheets of cardboard by dipping in water. Places hat-body material, such as crinoline, buckram or nylon, between layers of wet cardboard to soften material prior to blocking. Stretches softened material over heated lower die in machine and depresses pedal, causing upper die to descend and press material into shape of hat or hat frame. Depresses pedal to open machine and removes shaped hat or hat frame.

May be designated according to type of machine used; for example, Steam Blocker
Water Blocker

8557-150 HAT-BRIM CUTTER(garment & fabric)

DPT:685

brim rounder.

GED: 2 SVP: 3 EC: I PA: L 4

Cuts hat brims to specified width, or removes frayed, irregular or excess material from hat brims, by either of the following methods:

1. Moves lever on rounding jack to adjust brim guide, according to specified brim width. Places hat brim in guide, and pulls hat brim through guide and against razor blade, to cut excess brim material from hat. 2. Turns setscrew to adjust cutting blade on rounding machine, according to specified brim width. Places hat on machine hat block, and moves lever to expand block collar to hold hat firmly in place. Moves second lever or presses button to start machine turntable rotating, forcing hat brim against razor blade or rotary cutting blade, to cut excess brim material from hat. Removes hat from machine after cutting cycle. Replaces worn blades in rounding jacks or machines.

May tend automatic sewing machine that sews line of reinforcing stitches around hat brim. May tend machine that curls, shapes and smooths hat brims. May tend machine that crimps snap fasteners onto hats.

8557-154 HAT-BRIM-FLEXING-MACHINE TENDER

(garment & fabric)

DPT:685

brim flexer; ragging-machine operator; steamer and ragger.

GED: 2 SVP: 3 EC: I 4 PA: L 4

Tends machines that flex hat brims and raise nap, to improve pliability and appearance of brims:

Places felt hat on block in steam cabinet and depresses pedal to saturate hat with steam to soften it. Removes hat from block. Moves lever or depresses pedal to start machine. Inserts hat brim between rotating canvas or cloth-covered pads or rollers that bend and flex brim and raise nap. Removes hat from machine and places aside for final inspection.

May remove dust, lint and loose fibres from hat surface, using hand brush and air hose. May prepare and attach code labels and trim feathers to hat.

8557-158 HAT-CONE FORMER(garment & fabric)

DPT:685

coner.

GED: 2 SVP: 3 EC: I 4 5 PA: M 4

Tends machine that mats together fur fibres into felt hat cones: Positions perforated metal cone on revolving turntable of machine, and closes machine doors to preserve vacuum around metal cone. Depresses pedal to discharge preweighed amount of fur fibres into dome of machine that draws fibres onto revolving metal cone by

suction. Observes flow of fibres onto cone, and opens doors at end of forming cycle. Wraps wet burlap around formed felt cone, and places metal cover over burlap. Immerses cone in tank of heated water to strengthen fibre cohesion. Removes cone from water after required period and removes metal cover, burlap and felt cone from perforated cone.

8557-162 HAT-CROWN-AND-BRIM FORMER(garment & fabric) DPT:685
stretcher; tipper and brimmer.
 GED: 2 SVP: 3 EC: 1 4 PA: L 4

Tends stretching machines that rough-form crowns and brims on felt hat cones:

Soaks hat cones in heated water to soften them preparatory to stretching. Secures specified hat form in machine, or moves lever or handwheel to adjust expanding hat form in machine to specified crown height and brim width. Pulls softened cone onto hat form in tip-stretching machine. Depresses pedal to raise form and cone against moving machine fingers that knead tip of cone, stretching it onto form and shaping crown. Grasps base of cone and rotates it to ensure symmetrical shaping of crown. Removes resultant hat body from machine and pulls it onto hat block to smooth crown and set shape. Removes hat body from block after specified period and resoaks body. Pulls softened body onto hat form in brim-stretching machine. Depresses pedal to raise form and start movement of machine fingers that stretch brim. Turns body on form and repeats stretching operation until brim is formed around entire hat body. Measures width of brim to ensure conformance to specifications, using ruler. Removes hat body from machine and places aside on rack or table for further processing.

8557-166 HAT-GREASING-MACHINE TENDER(garment & fabric) DPT:685
grease ragger.
 GED: 2 SVP: 3 EC: 1 PA: L 4

Tends machine that applies grease or wax to felt hats, to add lustre and impart finished appearance:

Mounts rolls of cloth, impregnated with grease or wax, on machine holders. Threads cloth under feed rollers, over guides and applicator pads onto take-up spool. Fits hat over block mounted on machine. Moves lever or depresses pedal to start machine that rotates hat against moving cloth to impart finish to hat. Removes hat from machine at end of greasing cycle and feels and inspects hat for completeness of finish.

May tend machine that abrades or buffs hats to raise, smooth or polish nap prior to greasing. May rub coloured powder into hats to impart finish, using cloth bag. May be designated according to hat part greased; for example,
 Brim Greaser
 Crown Greaser

8557-170 HAT-POUNCING-MACHINE TENDER(garment & fabric) DPT:685
pouncer.
 GED: 2 SVP: 3 EC: 1 5 PA: L 4

Tends one or more machines that abrade or buff felt hats or hat bodies, to remove excess fibres, and raise, smooth or polish nap: Positions hat in guide, or over hat block, in pouncing machine. Depresses pedal or moves lever to start machine that rotates hat between or against rotating sandpaper or sharkskin rollers or belts to abrade or buff surface. Removes hat from machine at end of automatic cycle. Inverts and repositions hat in machine, and repeats operation on inside of hat. Removes hat from machine and inspects and feels surface to ascertain that specified texture or finish has been attained. Changes hat blocks in machine according to size of hats to be pounced.

May hold hat manually against rotating belt to impart finish. May tend machine that applies grease or wax to hats, to add lustre and impart finished appearance. May rub coloured powder onto hats to impart specified finish, using cloth bag. May be designated according to type of finish imparted, or hat part finished; for example,
 Brim Jigger
 Buffer
 Crown Pouncer

8557-174 HAT PRESSER, MACHINE(garment & fabric) DPT:685
ironer, hats; presser, hats.
 GED: 2 SVP: 3 EC: 1 3 4 PA: L 4

Tends one or more machines that press or iron caps, hats or hat parts, to set shape and impart specified finish, by one of the following methods:

1. Selects pressing die(s) according to specifications, and positions die(s) in pressing machine, by hand or using hand tools. Positions article, crown down, directly into die in machine bed, or places article over saddle (rubber hat-shaped liner) before positioning in machine, to protect article during pressing. Moves lever or presses button to close machine that presses, shapes and smoothes article. Removes article from machine and examines for flaws and wrinkles. 2. Inserts hat block into crown of hat, and places hat brim between upper and lower heated rollers in ironing machine. Pulls lever to lower upper roller onto brim and to start rollers rotating. Steadies hat with hand while allowing it to rotate with rollers. 3. Positions seam of article over form on bed of ironing machine and under feed wheel guide. Depresses pedal to lower heated iron onto seam, and feeds material under iron to smooth and flatten seam. 4. Places article over heated hat block in pressing machine. Smoothes and straightens article with hands, and lowers pressing form onto article. Depresses pedal to force steam through perforations in hat block to moisten and press article. Raises pressing form after specified period and removes article from block.

May tend pressing machines enclosed in steam-heated cabinets. May use flange (brim-shaped collar) in pressing machine to curl hat brims. May curl hat brims, using hand iron and hand press. May be designated according to hat part or material pressed, or machine used; for example,
 Brim Ironer
 Brim Presser
 Crown Presser
 Flanger
 Hat-Lining Blocker
 Hydraulic-Press Blocker
 Seam Presser
 Straw-Hat Presser

8557-178 HAT SORTER(garment & fabric) DPT:687
hat sizer.
 GED: 2 SVP: 3 EC: 1 PA: L 4 7

Sizes hats, and sorts according to size, colour, style and material, for further processing:

Pulls hat over marked sizing block to measure hat size. Marks size in hat crown, using pencil or crayon. Stacks hats on shelves or racks, according to size, colour, style and material specified. May compare and sort hats according to height of crown and width of brim.

8557-182 SERVICE GIRL, HAT FACTORY(garment & fabric) DPT:687
bundler, hat and cap parts.
 GED: 2 SVP: 3 EC: 1 PA: L 4 7

Gathers, sorts and distributes hat, cap or millinery parts and trimmings, according to colour, size, style or quantity, to facilitate assembly of hats or caps:

Gathers, sorts and bundles parts and trimmings; such as, feathers, ribbons, flowers, sweatbands and linings, for each lot of hats or caps, using pins, twine or supply box. Distributes material to workers engaged in assembling and trimming hats or caps. May measure and cut ribbon or other material, according to specifications, using ruler and scissors or cutting machine.

8557-186 EAR-MUFF ASSEMBLER(fur goods; garment & fabric) DPT:687
 GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles ear-muffs from fur and wire components: Selects presewn fur ear-covers according to colour and material specifications. Assembles ear-muffs by inserting wire loops of adjustable headband into selected ear-covers.

**8561-SHOEMAKING AND REPAIRING
OCCUPATIONS**

This unit group includes occupations concerned with making and repairing leather, and leather soled, fabric-topped footwear. Activities include: forming materials over last into desired styles, shapes and sizes; cutting, trimming, skiving, sewing, nailing, tacking, buffing and finishing footwear. Occupations concerned with cutting parts for footwear prior to shoe assembling, fastening or sewing are classified in Unit Group 8551, PATTERNMAKING, MARKING AND CUTTING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS. Occupations concerned with fabricating, assembling and repairing rubber and plastic footwear are classified in Minor Group 857, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS.

8561-110 SHOEMAKER, CUSTOM(ret. trade; shoes) **DPT:381**
GED: 3 SVP: 7 EC: I PA: L 4 7

Makes custom boots and shoes, using hand and machine tools: Selects patterns and leather for upper parts, and outlines patterns on leather. Cuts out parts with shears and knife, and sews parts together on machine to form uppers. Marks and punches out eyelets, inserts metal rings, and clinches rings on machine. Selects or assembles last, tacks insole to last and draws upper over last, tacking it in place. Trims upper with knife and sews on welt. Sews outer sole to lasted upper or cements sole in place. Tacks on rand, leather lifts to build heel base, and heel. Trims and buffs edges of sole and heel, using knife and buffing wheel. Brushes dressing dye on shoe and polishes shoe with rotating power brush. May build lasts. May make and repair prescription footwear for deformed feet and be designated accordingly; for example, Orthopaedic-Shoe Maker
Orthopaedic-Shoe Repairman

8561-114 SHOE REPAIRMAN(ret. trade; shoes) **DPT:661**
cobbler; shoemaker.
GED: 3 SVP: 7 EC: I PA: L 4 5 6 7

Repairs or refinishes shoes, following customer specifications, or according to nature of damage, or type of shoe: Positions shoe on last and pulls and cuts off sole or heel with pincers and knife. Starts machine and holds welt against rotating sanding wheel or rubs it with sandpaper to bevel and roughen welt for attachment of new sole. Selects blank or cuts sole or heel piece to approximate size from material, using knife. Brushes cement on new sole or heel piece and on shoe welt and shoe heel. Positions sole over shoe welt or heel piece on shoe heel, and pounds it with hammer so that piece adheres to shoe, drives nails around sole or heel edge into shoe, or guides shoe and sole under needle of sewing machine to fasten sole to shoe. Trims sole or heel edge to shape of shoe, using knife. Holds and turns shoe sole or heel against revolving abrasive wheel to smooth edge and remove excess material. Brushes edge with stain or polish and holds it against revolving buffing wheel to polish edge. Nails heel and toe cleats to shoe. Restitches ripped portions or sews patches over holes in shoe uppers by hand or machine. Stretches shoes by dampening portion of shoe and inserting and twisting adjustable stretcher that enlarges (stretches) material. Builds up portions of shoes by nailing, stapling, or stitching additional material to shoe sole to add height or make other specified alterations to orthopaedic shoes. Repairs belts, luggage, purses, and other products made of material, such as canvas, leather, and plastic. May assist in training new employees. May quote charges, receive articles, and collect payment for repairs.

8561-118 SHOE REPAIRER, FACTORY(shoes) **DPT:681**
cripple worker.
GED: 3 SVP: 6 EC: I PA: L 4 7

Repairs shoes damaged in manufacturing process: Inspects shoe or reads ticket to determine defects. Removes damaged parts, using hand tools, such as knife, hammer, lasting tool, prying tool, and tack puller. Operates stitching machine or stitches by hand, to repair broken or missed stitches and to replace parts. Relasts shoe to

remove defects, such as wrinkles in outer parts, bunching of inner parts, and crooked seams. Cuts out replacement parts, using knife. Aligns and cements parts, such as edges, bindings, heels, soles, and uppers of shoe by hand. May repair cracks, scratches, and restore colour to blemished areas on shoe. May nail metal toe and heel plates to shoe bottoms.

8561-122 HEEL-SEAT FITTER(shoes) **DPT:684**
GED: 3 SVP: 4 EC: I 5 PA: L 4

Cuts heel seat of leather sole, preparatory to mounting heel, using cutting machine: Adjusts guides and stops on machine, according to specifications for shoes being processed, using hand tools. Adjusts rotary cutting blades on machine for specified width, depth, and bevel, using wrench and rule. Starts machine and positions shoe between guides. Pushes shoe against cutting blades that makes marginal cut around heel seat, to provide snug fit when heel is attached.

8561-126 STITCHING-MACHINE OPERATOR(shoes) **DPT:682**
stitcher.
GED: 2 SVP: 4 EC: I PA: L 4 7

Operates single, double, or multiple-needle stitching machine to join, decorate or reinforce shoe parts, or attach findings to shoe: Selects and places spool of thread on spindle or looper, and draws thread through guides, slots, and needles. Aligns parts and presses knee control or pedal to raise presser foot or roller. Positions parts under needle and lowers presser foot or roller. Starts machine and guides parts under needle, following seams, edges, or markings, or moves edges of part against guide. Cuts and trims excess thread or material from parts, using scissors or knife. May be designated according to finding sewn on shoe, number of needles in machine, type of stitch used, machine operated, or part of shoe stitched; for example, Buckle Sewer
Double-Needle Stitcher
Fancy-Stitch-Machine Operator
Vamp Seamer

8561-130 HAND STITCHER, SHOES(shoes) **DPT:684**
hand lacer.
GED: 2 SVP: 4 EC: I PA: L 4 7

Hand sews shoe parts, such as heel ends, plugs, and quarters to vamp: Soaks skived parts in water to soften them. Pulls lasted shoe on pin jack, and tacks parts to last, using lasting tool. Punches stitch openings in parts with awl. Inserts waxed thread through punched openings, to join skived shoe parts to vamp. Removes tacks and shapes seam, using lasting tool. Smooths and polishes seams, using rubbing stick or buffing cloth. May sew sole to shoe by hand. May sew particular type of footwear and be designated accordingly, Moccasin Sewer

8561-134 COUNTER AND UPPER TACKER(shoes) **DPT:684**
GED: 2 SVP: 3 EC: I 5 PA: L 4

Inserts cement covered parts between lining and shoe upper, and tacks upper to last: Places counter and tip support (box toe) on rack, dips rack in liquid cement and drains excess cement from parts. Positions last on pin jack. Inserts cemented parts between lining and upper. Pulls shoe upper onto last, and aligns back seam of upper with guide marks on last. Tacks upper to last by machine or by hand, using lasting tool. Maintains level of liquid cement in container.

8561-138 HEEL BREASTER(shoes) **DPT:684**
GED: 2 SVP: 3 EC: I 5 6 PA: L 4

Trims and shapes breast of leather heels according to specifications, using trimming machine: Turns wheel to adjust cutting stroke of machine to height of heel. Sets lasted shoe on moveable pin jack, and pushes pin jack under cutting blade to trim and shape heel, or depresses pedal to lower cutting blade to trim and shape heel. Trims rough edges missed by breasting

machine, using knife. Removes dull cutting blades from machine, using wrench, and sharpens them on grinding wheel.

8561-142 LASTER(shoes) DPT:684
GED: 2 SVP: 3 EC: 1 5 PA: L 4

Shapes and joins upper parts of footwear to insole, performing any combination of following duties:

Tacks insole on last. Positions and secures last in holding device. Pulls upper onto last by machine to shape toe, vamp, and quarters of shoe, or stretches edges of upper over last, using lasting tool. Checks alignment of toe and heel of upper. Secures bottom of upper in pincers of machine which hold it evenly and closely over edge of insole. Attaches folded part of upper to insole by operating tacking device, by spreading adhesive substance along edge of insole, or by pressing pre-cemented upper onto insole.

May place upper in steamer to soften leather prior to lasting. May perform certain lasting operations by hand rather than machine. May be designated according to machine tended, securing device employed, or part lasted; for example, Pulling-Over-Machine Operator Side Laster, Staple Toe Laster

8561-146 NOVELTY-SHOE LACER(shoes) DPT:684
fancy stitcher.
GED: 2 SVP: 3 EC: 1 PA: S 4

Assembles and decorates parts for novelty shoes, such as moccasins, using shoe making tools, performing any combination of following duties:

Fashions upper portion of shoe by lacing quarters to vamp, using needle. Aligns perforated upper and sole, inserts tipped lacer, and draws parts together by lacing around shoe, using awl. Cuts slits in upper to accommodate weaving, using knife. Draws strips of material, such as fabric or leather, between slits in shoe upper to weave decorative design, using needle. Positions lasted vamp in holder on work table, places pattern over vamp and marks stitch positions, using marking pen. Stitches design in vamp following pattern marks, using needle and decorative cord.

8561-150 SHOE-DECORATION ASSEMBLER(shoes) DPT:684
bow maker.
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Assembles and attaches bows and other decorations to shoe uppers, performing any combination of following duties:

Selects precut strips of material, such as leather, plastic, or fabric, and ties strips into bows by hand. Joins bow parts, using hand or foot stapler. Sews decorative parts together by hand. Brushes cement onto parts and presses parts together. Matches parts for size, colour, and appearance for attachment to uppers. Staples bows or other decorative parts, such as buckles, to uppers.

8561-154 SHOE DYER(ret. trade; shoes) DPT:684
shoe tinter.
GED: 2 SVP: 3 EC: 1 7 PA: L 4 7

Dyes or tints shoes for customers of shoe repair or shoe shining shops: Inserts shoe tree or stuffs paper into shoe to stiffen shoe upper, forming smooth working surface on shoe. Cleans shoe with acetone, alcohol, water, or prepared cleaning solutions to remove dirt, dye, and grease, using cloths, brushes or sponges. Selects prepared dye or mixes dyes to match shade specified by instructions or colour chart. Applies coat of dye or tints onto shoe upper, using spray gun or swab.

8561-158 SHOE-REPAIRMAN HELPER(shoes) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Helps to repair or refinish shoes, performing any combination of the following duties:

Rips worn heels and soles from shoes, using hammer and knife. Tacks new heels and soles in place, using hammer and stitching machine, and trims excess leather with knife or revolving trimmer. Sands and finishes sole edges by holding them against sanding rollers and revolving metal disk. Shines, stains and dyes shoes. See also definition for term title, 02-160 HELPER (any ind.).

May sell merchandise, such as shoestrings, polishes and other accessories.

8561-162 STEEL-TOE PLACER(shoes) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Inserts steel box toe into forepart of safety shoe:

Selects designated size of steel box toe from stock. Draws upper leather back from toe area by hand and inserts box toe over lining. Applies cement onto vamp edge of box toe, using brush, and covers edge with felt or rubber strip to prevent friction between metal and upper leather. Pulls upper leather back over toe area, using lasting pincers.

8561-166 WOOD-HEEL FINISHER(shoes) DPT:684
heel finisher.
GED: 2 SVP: 3 EC: 1 PA: L 4

Finishes leather covered wooden heels, performing any combination of the following duties:

Trims and splits projecting edges of breast flap, using knife or scissors. Brushes cement onto shank and lodge. Inserts and cements flap of outsole to breast of heel. Bevells and smooths edges of breast flap with beveling stick. Smooths wrinkles from heel covering with heated iron or hot air. Sands dried cement from finished heels.

8561-170 BURNISHER(shoes) DPT:685
burnishing-machine operator; polisher.
GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends machine that burnishes shoes, or shoe parts, to give smooth finish by any of the following methods:

1. Starts burnishing machine and coats revolving burnishing wheel with wax, using wax block. Holds shoe against waxed wheel to apply wax to shoe, then against bristle and cloth brushes to polish. 2. Positions edge of shoe upper against guides and under heated burnishing iron. Starts machine and guides edge under iron and edge-rolling wheel to roll and press edge of upper. 3. Selects vibrating heating irons according to thickness of heel lift or sole, and clamps them in chuck of machine. Turns dial to heat and regulate temperature of irons. Pushes lever that rotates chuck to bring heel lift or sole into working position. Burnishes edges by pressing and guiding heel or sole against vibrating iron.

May bundle shoe parts for further processing. May burnish a specific part of shoe and be designated accordingly; for example, Edge Setter Heel Burnisher

8561-174 CHANNELER(shoes) DPT:685
insole channeler.
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tends machine that cuts two parallel grooves near edge of insole, prior to wetting:

Positions insole against machine guide. Depresses pedal to raise machine bed against cutting blades that cut grooves (channels) in insole. Adjusts machine to control width of cut according to shoe specifications, using hand tools.

May channel outsoles and be designated accordingly, Channeler, Outsole

8561-178 FASTENER, SHOE PARTS(shoes) DPT:685
nailer; riveter; stapler.
GED: 2 SVP: 3 EC: 1 5 PA: L 4

Tends nailing, slugging, stapling, or tacking machine that attaches shoe parts, such as heel, insole, and shank to partially assembled shoes:

Aligns parts on bed of machine, or positions them under machine head on jack pin. Holds parts against guide, and depresses pedal that drives fasteners into parts. Fills hopper of nailing or tacking machine, or replaces wire spool on spindle of slugging or stapling machine.

May join specific shoe part or operate particular type of machine and be designated accordingly; for example, Heeler, Machine Insole Tacker

8561-182 HEEL ATTACHER(rubber; shoes) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4

Attaches heels to leather and nonleather shoes, or shoe soles, by either of the following methods:

1. Loads nailing machine hopper with nails or sets head of screw in holding device of screw driving machine. Positions inverted shoe and heel against stop guides, and depresses pedal that forces shoe and heel together and automatically drives nails or screws in heel. 2. Brushes liquid cement on heel seat. Positions heel on heel seat of shoe and pushes pedal to lock shoe and heel in holding fixture of machine until cement dries.

May tend machine that punches holes in leather heels to facilitate nailing. May operate specific type of machine and be designated accordingly; for example, Heel-Nailing-Machine Operator

8561-186 HEEL BUILDER(shoes) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4

Builds shoe heels from materials, such as leather, fibreboard, rubber, and plastic:

Runs lifts through, or over cement-covered rollers of machine according to material, size, and style of heel specified. Stacks cement-covered lifts against face plate of machine. Places nail in holding device of machine ram, and depresses pedal to start machine that drives nail into stacked lifts. Places cemented heels in press to dry.

8561-190 SOLE MOULDER(shoes) DPT:685
archer; moulder.
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends machine to mould outsoles or insoles to conform to shoe last at shank and arch:

Turns thumbscrews to adjust last and size guides to specifications. Sponges grained surface of leather soles at arch to soften leather. Positions sole on die and against guides. Depresses pedal to lower mould that presses sole against die, shaping arch and shank. Replaces dies and moulds when last sizes change, using hand tools.

May mould particular type of sole and be designated accordingly; for example, Insole Moulder

8561-194 TRIMMER, SHOE PARTS(shoes) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends machine that trims edges of shoe parts, such as heels, outsoles or uppers, to remove excess material and impart finished appearance:

Turns specified knobs or setscrews to adjust guides and cutting blade of machine. Depresses pedal to start machine, and guides edges against revolving cutter to trim excess material from parts. Replaces cutters and guides on machine, according to thickness of sole and design of shoe, using hand tools.

May trim specific area or part of shoe, or operate particular type of machine and be designated accordingly; for example,

Heel Trimmer
Inseam Trimmer
Rough Rounder, Machine

8561-198 STOCK SORTER, SHOE PARTS(shoes) DPT:587
bundle assembler; caser, shoe parts; parts distributor.
GED: 2 SVP: 3 EC: 1 PA: L 4

Gathers and sorts shoe parts for delivery to other departments or workers, performing any combination of following tasks:

Collects parts, such as heels, quarters, and outsoles from baskets, bins, or racks, following quality, quantity, size, and style specifications. Sorts parts according to identifying numbers and bundles or places them in containers for delivery or storage. Receives and stores parts. Examines parts for defects, such as cracks or rough finishes. Carries or routes parts to workers. Copies identifying numbers from order ticket onto shoe parts or containers, using crayon or pencil.

8561-202 BOTTOM FILLER(shoes) DPT:684
insole filler.
GED: 2 SVP: 2 EC: 1 PA: L 4

Fills insole depression with compound to provide cushion for ball of foot and even surface for attachment of outsole:

Spreads heated or cold compound on insole, using spatula, or turns valve that dispenses measured amount of compound into insole depression. Positions insole on machine, and depresses pedal to activate heated roller or plate that presses and smooths compound. Fills steam heated reservoir (pan) with compound, using scoop. Stacks filled insoles on rack for removal to next work station.

May press and smooth compound by hand.

8561-206 BOTTOM WHEELER(shoes) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Imprints designs, lines, or notches on bottom of outsole to decorate or finish shoe sole:

Presses and guides heated scoring tool, or notching tool (branding iron) on sole or heel of shoe to imprint design. Loads processed shoes on wheeled rack, and pushes to storage area.

May guide shoe against fixed scoring or notching tool.

8561-210 INKER, HAND(shoes) DPT:684
shoe dresser; shoe sprayer.
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Finishes shoe or part of shoe by hand, applying liquid dressing, ink, or dye:

Cleans shoes or shoe parts, using sponge or cloth and cleaning fluids, such as ammonia and ether. Applies ink, stain, wax, or filler, such as dope or plastic solution onto edges or along seams of shoe parts to colour, fill, or protect parts, using brush, cloth, sponge, spray gun, or striping tool. Applies liquid dressing or dye to produce glossy finish.

May treat a specific part of shoe or use a particular type of finish and be designated accordingly; for example,

Antiquer
Edge Inker

8561-214 LAST IRONER(shoes) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Fits and nails steel plates to bottoms of plastic shoe lasts:

Straps last to ironing jack (holding device), and positions steel plates of specified size on bottom of lasts. Nails pre-shaped steel plates to last bottoms, using hammer. Files edges of last bottoms and steel plates to form smooth, flush edges.

8561-218 NAIL CUTTER(shoes) DPT:684
rasper.
GED: 2 SVP: 2 EC: 1 PA: L 4

Cuts and files nails that protrude through insoles of shoes:

Cuts protruding nail ends, using wire cutters. Presses and holds shoe against revolving shaft of rasping machine to file nails and smooth insole. Holds shoe under vacuum nozzle to remove filings from inside shoe.

8561-222 RELASTER(shoes) DPT:684
slip laster.
GED: 2 SVP: 2 EC: 1 PA: L 4

Replaces last in shoe upper to facilitate application of the sole, using either of following methods:

1. Places broken last (open at hinge) on stationary pin jack. Positions shoe upper on last and pulls heel section of last down to stretch upper. 2. Places toe of upper onto last. Inserts shoe horn device in heel section of upper, and depresses pedal to pull upper onto last.

May align sponge heel pad between last and insole. May attach upper parts, such as vamp strap or wrapper onto last, using stapler. May immerse uppers in softening solution to prevent seams from splitting.

8561-226 THREAD LASTER(shoes) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Sews shoe upper to insole, using stitchdown thread-lasting machine: Positions insole on last, and pulls upper over last by setting toe and end of upper in jaws of machine. Holds upper against insole on shoe rest. Depresses pedal which lowers feeder onto upper edge. Regulates lever or pedal to start machine, and guides shoe into feeding mechanism that sews upper to insole. Stops machine. Removes shoe from machine, and cuts thread, using knife.

8561-230 WRINKLE REMOVER(shoes) DPT:684
ironer; presser.
GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Applies heat to shoes or shoe parts to remove wrinkles: Inspects shoes or shoe parts for inside or outside wrinkles. Removes wrinkles, using equipment, such as heated hand, stationary irons or plates, blue flame torch and rounded stick, hot air blower and awl-shaped hand tool, or heated forming die. May remove wrinkles by running parts between pressing rollers. May smooth a particular part of shoe and be designated accordingly; for example, Upper Ironer

8561-234 BEVELER(shoes) DPT:685
skiving-machine operator.
GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends skiving machine that bevels edges of shoe parts, to prevent ridges at stitched, cemented, or folded edges: Depresses pedal or activates switch to start machine. Holds and guides part against guide and between feed rollers that force edges of part against blade. Turns setscrews to adjust feed rollers, guides, and blade angle to specifications. Verifies width and thickness of beveled edges visually and using micrometer. May use pedal to regulate speed of rollers along curved, straight, or angled edges of part. May tend machines that roughen edges prior to cementing, or skive narrow parts, such as straps and backstraps. May feed automatic machine that bevels edges of shoe parts. May bevel specific part of shoe and be designated accordingly; for example, Insole Beveler

8561-238 BUFFER, SHOE PARTS(shoes) DPT:685
buffing-machine operator; rougher; scourer.
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that smooths or roughens shoe parts by any of following methods:
1. Holds and presses part against abrasive cylinder or belt that polishes and sands part, or against wire roughing wheel to clean and prepare part for cementing. 2. Feeds sole between rubber presser roller and abrasive-covered roller that roughens part for cementing. 3. Presses sole against inflated buffing pad which scours and smooths shank and breast. May work on specific part of shoe and be designated accordingly; for example, Heel Sander Sole Rougher

8561-242 CEMENTER, HAND(shoes) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends pressing machine that joins pre-cemented shoe parts by any of following methods:
1. Turns setscrew that adjusts distance between pressure rollers, feeds aligned parts between rollers, and observes joining of parts. 2. Positions parts on machine bed, and depresses pedal that forces heated presser head against parts to join them. 3. Positions pre-cemented insole between horizontal disks, Depresses pedal to cause disks to press lining or rib into insole channel. May place shoe parts in heater to soften leather prior to cementing. May brush solvent on pre-cemented parts to soften cement prior to joining parts. May apply cement to parts by hand or machine. May join specific parts and be designated accordingly; for example, Sole Layer

8561-246 CHANNEL CLOSER(shoes) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that closes channels of outsoles: Brushes cement in channeled edge of outsole of lasted shoe, after sole-stitching operation. Guides edge of outsole between revolving corrugated wheels of machine which close and seal lip of outsole.

8561-250 CUT-OUT-AND-MARKING-MACHINE TENDER(shoes) DPT:685
framing-die-machine operator.
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that simultaneously trims leather shoe parts to size, punches perforations, and marks stitching outline: Bolts specified die to ram or bed of machine, using wrench. Brushes ink on roller which marks stitch outline on part. Positions part on machine, and presses pedal to start machine. Stacks processed parts in container.

8561-254 FEATHEREDGER AND REDUCER(shoes) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that shaves outsole to reduce thickness and increase flexibility: Positions specified die rollers on machine shaft. Turns handwheel to set cutting gauge according to outsole size. Places outsoles against guides on machine bed, and depresses pedal to start rollers that force shank, heel seat, forepart, or edges of outsole against machine blade. May reduce thickness of insoles at edges to increase insole flexibility. May reduce or bevel a specific part of shoe and be designated accordingly; for example, Heel Reducer

8561-258 FOLDER, SHOE PARTS(shoes) DPT:685
folding-machine operator.
GED: 2 SVP: 2 EC: 1 5 6 PA: S 4 7

Folds and presses pre-cemented edges of shoe parts, such as insoles, quarters, vamps, toe tips, and tongues to strengthen and smooth edges: Positions shoe part against guide on bed of machine. Depresses pedal to lower presser foot onto part, or runs part through rollers of machine to fold part and press pre-cemented edges together. May tend machine that applies cement to edges of shoe parts in conjunction with folding operation, or may pre-cement edges of shoe parts by hand and be designated accordingly; for example, Binding Folder Folder, Hand

8561-262 FORMER, SHOE PARTS(shoes) DPT:685
moulder, shoe parts.
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends equipment to shape shoe parts, such as collars, arch supports and counters: Positions shoe or shoe part on heated forming die, or in mould. Adjusts rheostat to regulate temperature of forming device as specified for material being used. Pulls lever or depresses pedal to bring padded pressing arm, or die against shoe or shoe part to impart designated shape. Releases lever after specified time and removes shoe or part from device. Loads shaped items onto rack truck for removal to next work station. May complete forming of certain shoe parts by hand. May feed moccasin uppers between heated rollers of knurling machine to press and shape seams into ridge. May operate a specific type of machine, or form or mould a particular part of shoe and be designated accordingly; for example, Counter Moulder Knurling-Machine Operator Top Former

8561-266 GROOVER AND TURNER(shoes) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machines that cut heel blanks (rough forms) of wood, leather, or fiberboard into heels:

Inserts blank in holding device of machine. Pushes heel against revolving knife blades to shape outside of heel. Positions shaped heel in holding device of second machine, and starts machine that hollows out face of heel. Removes, installs and sharpens cutting blades of machines.

8561-270 HEEL COMPRESSOR(shoes) DPT:685
heel moulder.
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that compresses heels or top lifts to give them better wearing quality:

Starts machine and feeds pre-cut heels of leather or composition material into machine, and observes operation to detect malfunction. Transports heels and top lifts from storage to work location, using cart.

May change dies and adjust stroke of ram.

8561-274 HEEL SCORER(shoes) DPT:685
scorer.
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that scores insole of shoe to provide guideline for installation of heel and indicate where channel of insole begins:

Turns setscrews and moves guides on machine to hold specified insoles. Positions insole against guides, and presses switch or pushes lever to start machine that cuts score across heel seat of insole.

May make cut in toe of welt insole to prevent puckering when stitched to shoe upper.

8561-278 HEEL SHAPER(shoes) DPT:685
GED: 2 SVP: 2 EC: I 5 7 PA: L 4

Tends cutting machines that shape heels by either of the following methods:

1. Inserts heel into holding device of machine. Depresses pedal to start machine that automatically forces heel against revolving cutting blades, following and shaping front of heel. 2. Bolts specified cutting disk to machine, using wrench, and turns setscrews to adjust machine for length and depth of cut. Loads heels into feeding device. Starts machine that automatically cuts gauge in heels to form heel seat and ejects them into storage container.

May change and sharpen cutting tools. May tend a specific type of machine, or shape a particular part of shoe and be designated accordingly; for example, Concaving-Machine Tender
Heel Gouger

8561-282 INKER, MACHINE(shoes) DPT:685
staining-machine tender.
GED: 2 SVP: 2 EC: I 7 PA: L 4 7

Tends machine that applies ink or stain to colour edges of shoe soles or heels, by any of the following methods:

1. Inserts and guides outsole or midsole between pressure roller and ink-covered rollers of machine. 2. Depresses pedal that separates feed rollers; releases pedal that closes and starts rollers that hold and turn sole edge against inked wheel. 3. Positions and guides soles under machine nozzle that applies ink or stain to edge of attached outsole. 4. Positions heel against machine guide, and turns heel against revolving brush that applies ink to heel edge.

May colour particular part of shoe and be designated accordingly; for example, Sole-Edge Stainer

8561-286 PERFORATING-MACHINE TENDER(shoes) DPT:685
cut-out-machine operator.
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that cuts out decorative designs or ventilating holes in shoe parts by either of following methods:

1. Clips guide plate on machine bed and turns knobs to adjust position.

Clamps hammer block or punch in machine head. Aligns part, such as saddle, strap, or vamp on guide plate, and starts machine that cuts designs or holes in part. Turns knob to accelerate reciprocal action of punch or to regulate cutting pressure of head. 2. Selects and positions die plate on machine, and clips shoe part on plate. Pushes plate on rails under machine head, and starts machine that cuts designs or holes in parts.

8561-290 SHOE LACER, MACHINE(shoes) DPT:685
lacer; lacing-machine operator.
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that laces string through shoe eyelets to close throat, prior to lasting operations:

Turns knob that adjusts length of string according to specifications. Pushes or pulls lever to adjust distance between protruding needles on machine bed to correspond with eyelet spacing. Positions part on machine bed so that needles extend through eyelets. Depresses pedal to start machine that laces string through eyelets, and ties and cuts string.

8561-294 SMOOTHING-MACHINE TENDER(shoes) DPT:685
leveler; pounder.
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that flattens and smooths shoe parts, such as uppers, insoles and outsoles, by any of the following methods:

1. Positions part under roller, and guides part while machine rolls seams flat and smooth. 2. Positions shoe on pin jack and against holding device. Starts machine that forces shoe against presser roller and moves roller back and forth over sole to flatten ridges, bulges, and nicks. 3. Positions part over or under preheated form and depresses pedal that lowers head of machine over part, pressing part to smooth seam. 4. Positions part on anvil under power hammer, and depresses pedal or pushes button that raises anvil and starts reciprocating hammer to flatten and smooth shoe part. 5. Guides bottom of lasted shoe against wheel that pounds out puckers on edges of upper.

May operate particular type of machine, or smooth a specific part of shoe and be designated accordingly; for example, Seam-Press Operator
Sole Leveler

8561-298 SPLITTING-MACHINE TENDER(shoes) DPT:685
shaver; splitter.
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that splits shoe parts to uniform thickness or cuts parts into two or more layers by one of the following methods:

1. Feeds part between rollers that force part against blade. 2. Positions part against machine guides, and depresses pedal to force splitting blade against part. Turns setscrews or handwheels to adjust blade or rollers as specified. Verifies thickness of parts with specifications, using gauge. Bundles and stacks shoe parts on rack.

May sharpen machine blades. May operate particular type of machine, or split a specific part of shoe and be designated accordingly; for example, Ball-Point Splitter
Sole Splitter

8561-302 STITCH SEPARATOR AND SIMULATOR(shoes) DPT:685
welt wheeler; wheeler.
GED: 2 SVP: 2 EC: I 5 PA: L 4

Tends machine that presses decorative indentations on welt to separate or simulate stitches:

Mounts specified indenting blade on wheel on machine, using hand tools. Positions shoe against guide on machine bed. Pulls lever to adjust blade for stitch length when separating stitches. Depresses pedal to raise bed, pressing welt against machine head. Holds welt under indenter blade to separate stitches, or under heated corrugated wheel that forms simulated stitching.

May be designated according to type of indenter used.

8561-306 TACK-PULLER(shoes) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends tack-pulling machine that removes temporary holding tacks or staples from lasted shoes:
Pushes pedal or presses button to start machine. Holds and guides lasted shoe under revolving arm or under machine jaws that pull tacks from last and insole of upper.
May pull temporary holding tacks from upper by hand, using tack-pulling tool or pincers.

8561-310 TAPER, SHOE PARTS(shoes) DPT:685
beveling taper.
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that applies adhesive tape to reinforce seams of upper shoe parts:
Positions first of series of parts connected by thread on machine feed roller. Sets cutting device on machine to cut tape at designated length for parts being taped. Depresses pedals that actuate roller to feed parts into machine and apply tape. Cuts thread connecting parts, using scissors. Replaces tape roll on machine.
May tape particular shoe part and be designated accordingly; for example,
Top Taper, Machine

8561-314 TOE AND HEEL SPRAYER(shoes) DPT:685
GED: 2 SVP: 2 EC: 1 7 PA: L 4 7

Tends machine that sprays toes and heels of shoes with finishes, such as wax, lacquer, or paint:
Pours finishing liquid into dispenser. Turns valve to adjust spray mechanism, and seats shoe on spindle. Activates revolving spindle and spray mechanism to spray finish on heel or toe. Examines shoe to determine coverage. Adds thinning solution to finishing liquid as required. Places finished shoes on rack to dry.
May finish a particular part of shoe, or use a specific type of finishing liquid and be designated accordingly; for example,
Heel Sprayer
Wax Sprayer

8561-318 VAMP CREASER(shoes) DPT:685
creaser; crimper.
GED: 2 SVP: 2 EC: 1 PA: L 4

Creases shoe vamps by either of following methods:
1. Positions leather model of vamp on vamp to be creased, and places them under heated machine head. Depresses pedal to lower head and crimp vamp and model against parallel walls. Positions weights over crimped vamps to obtain permanent crease. 2. Places assembled shoe over die in machine head, and stamps crease into vamp where foot bends.
May crease turn-stitched seams of lined vamp straps.

8561-322 WELT-BUTTER AND TACKER(shoes) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that cuts welt strip at heel seat of lasted shoe and tacks welt ends to insole, preparatory to bottoming operations:
Turns wheel to adjust holding device to fit shoe. Positions shoe on movable pin jack. Pushes pin jack under machine head, and depresses pedal to start machine that cuts welt strip and tacks welt ends. Fills machine receptacle with tacks. Sharpens cutting blades, using hone.
May cut off excess welt at heel seat of lasted shoe, using knife and be designated accordingly; for example,
Welt-Butter, Hand

8561-326 CEMENT APPLICATOR(shoes) DPT:686
GED: 2 SVP: 2 EC: 1 4 PA: L 4

Applies cement onto shoe parts for subsequent joining:
Feeds parts between pressure and cementing rollers of machine, and removes cemented parts, or holds parts under machine applicator nozzle that applies cement to parts. Suspends cemented parts from bar, or places them on wire rack for drying. Applies cement to irregular shaped or odd size parts by hand, using brush. Maintains level of cement in machine reservoir. Removes sections from machine, using hand tools to clean cement buildups.

May coat a particular part of shoe and be designated accordingly; for example,
Bottom Cementer

8561-330 SHANKER(shoes) DPT:687
shank cementer; shanking operator.
GED: 2 SVP: 2 EC: 1 PA: L 4

Positions and glues metal, wood, or plastic shank piece to shank of footwear, such as shoes and skates, to support arch:
Applies glue to shank piece by dipping shank in pot of glue, or by passing shank under glue dispensing spout. Presses glued shank piece in place on footwear by hand. Replaces footwear in rack, and pushes rack to next work station.
May tend machine that inserts shank in place on footwear.

8561-334 TRIMMER, HAND(shoes) DPT:687
skiver, hand.
GED: 2 SVP: 2 EC: 1 PA: L 4

Trims shoe parts by hand:
Trims excess material from edges or decorative openings of shoe parts, using hand tools, such as knife and shears, and following specifications, markings, or template outline.
May remove cement spots from upper linings. May trim particular part of shoe and be designated accordingly; for example,
Vamp Trimmer

8562-UPHOLSTERERS

This unit group includes occupations concerned with making, rebuilding and repairing various upholstered products; such as, chairs, sofas, automobile seats, cushions, mattresses, casket interiors and exteriors. Activities include: cutting, forming, padding, stuffing, compressing, springing, tying, sewing, gluing, tacking and trimming textile, leather, plastic and various other upholstery materials.

8562-110 UPHOLSTERER, ALL AROUND(furn.) DPT:361
upholsterer.
GED: 4 SVP: 7 EC: 1 PA: M 4 7

Repairs and rebuilds upholstered furniture, using hand tools and knowledge of fabrics and upholstery methods:
Discusses such matters as fabric, colour, style and cost with customers. Removes covering, webbing, and padding from seat, arms, back, and sides of workpiece, using tack puller, chisel, and mallet. Removes defective springs by cutting cords or wires that hold them in place, using scissors or wire cutters. Replaces webbing and springs or reties springs, using tackhammer, hand shears, needle and twine and clinching tool. Measures and cuts new covering material with measuring tape and scissors. Installs material on inside of arms, back, and seat, and over outside back and arms of wooden frame. Tacks, glues, or sews ornamental trim, such as decorative nails, braid, and buttons, to cover or frame. Operates sewing machine to seam cushions and join various sections of covering material, or sews by hand.
May remove stains from furniture fabrics, using cleaning agents, brush, and cloth. May estimate yardage required to reupholster furniture to determine fabric costs. May repair wooden frame of workpiece, using cabinetmaker's hand tools. May refinish wooden surfaces on furniture. May upholster cornices and be designated accordingly.

8562-112 PATTERNMAKER-AND-UPHOLSTERER, AIRCRAFT(air & space-craft) DPT:481
GED: 4 SVP: 7 EC: 1 PA: L 3 4 7

Lays-out, cuts and fabricates aircraft upholstery and interior linings, according to sketches and design specifications:
Draws cutting lines of patterns on wood or cardboard following blueprints, oral instructions or dimensions of parts to be covered, using draughting instruments and employing knowledge of pattern-making techniques. Cuts along marked lines to form patterns, using band saw, shears or electric cutter. Positions patterns on upholstery and interior linings. Marks and cuts prototype parts, using marking

pencil, shears or electric cutter, and assembles parts, using sewing machine. Verifies accuracy of fit before using patterns for production. Fabricates production-run upholstery and interior linings from plastic or fabric material, using patterns, marking pencil, shears or electric cutters, and sewing machine. Fabricates sample and special or short run items of upholstery and interior linings without using patterns.

8562-114 VEHICLE-UPHOLSTERY REPAIRMAN(furn.) DPT:361

GED: 3 SVP: 6 EC: 1 PA: M 3 4 7

Repairs, or replaces upholstery in vehicles, such as automobiles, buses, trucks, boats and railroad cars:
Inspects vehicle to determine need for repairs and material required. Removes old upholstery from seats and door panels of vehicle, using tack puller and knife. Measures and cuts new padding and covering materials to required dimensions, using knife or shears. Replaces seat springs and ties them in place. Operates sewing machine to join material or sews by hand. Fits covering to seat frame and secures it with glue, tacks and hammer.
May repair or replace materials on the interior of automobile roofs and be designated accordingly; for example,
Top and Trim Man

8562-118 UPHOLSTERER, AIRCRAFT(air & space-craft) DPT:684

GED: 3 SVP: 5 EC: 1 PA: M 3 4

Fabricates and installs upholstering and other materials, and installs fittings and accessories, to insulate, furnish and decorate aircraft interiors:

Cuts, fits and secures insulating materials to structural members and surfaces of compartments, using hand tools and adhesives or fasteners. Lays out, cuts, fits and secures carpeting, using tape measure, shears and screws or other fasteners. Cuts, sews and fills upholstery cushions, using shears and sewing machine. Installs accessories, such as safety belts and storage harnesses, and decorative items, such as curtains and panels, using bolts, screws or other fasteners, and hand tools. Lays out and cuts patterns or templates when required for repeat production.

May work principally in aircraft manufacturing upholstery shop, laying out, cutting and sewing carpets, upholstery, interior furnishings and items, such as insulating blankets and covers. May work principally in aircraft, installing pre-cut and pre-assembled materials, fittings and accessories and be designated accordingly, for example,
Trimmer, Aircraft

8562-120 CUTTER-AND-INSTALLER, SEAT COVER(motor vehicle) DPT:684

GED: 3 SVP: 4 EC: 1 PA: M 3 4 7

Cuts, fits and installs seat covers:

Examines standard pattern or removes and measures automobile seat to determine amount of material required, using hand tools and tape measure. Cuts material according to measurements or standard pattern, using hand shears. Places material on pattern or pins it to seat cover and marks material with chalk to indicate where it is to be sewed, reinforced or decorated. Secures completed cover to seat with tacks or staples, using upholstery tools or stapler.

May operate sewing machine to make alterations to pre-finished standard cover. May cut, fit and install convertible tops and be designated accordingly; for example,
Cutter-and-Installer, Convertible Top

8562-122 UPHOLSTERY REPAIRMAN(furn.) DPT:684

GED: 3 SVP: 4 EC: 1 PA: M 3 4 7

Repairs or replaces damaged or defective upholstery materials and show-wood on chairs and sofas:

Examines upholstery materials and show-wood to locate damage or defects. Sews tears or rips with needle and thread. Pulls tacks or staples from upholstery, using hammer or pliers to remove fabric cover from frame. Obtains replacement covering from cutting department. Tacks, sews or staples replacement materials to frame. Refinishes scratches, scrapes or other damage on show-wood, using sandpaper, wood-filler, wood-stain and varnish.

May repair mechanical part of adjustable reclining chair or convertible sofa-bed by replacing or adjusting parts, using pliers, wrenches, screwdrivers and other hand tools.

8562-126 SPRINGER(furn.) DPT:684

GED: 2 SVP: 4 EC: 1 PA: M 3 4

Installs webbing and springs in furniture frames preparatory to upholstering by either of the following methods:

1. Attaches ends of sinuous springs to inside of back or seat section, using hammer, metal clips and nails. Arches springs across section of frame from back to front, manually, and attaches front ends with metal clips to inside front of frame. Attaches spiral springs at specified intervals between sinuous springs by crimping ends, using pliers. Attaches spiral springs to side edges of frame opening, using metal clips, nails and hammer, and crimps spiral springs around sinuous springs, using pliers to secure in place. 2. Tacks or staples ends of webbing strips to side of frame, using tack hammer or staple gun. Stretches webbing across frame with webbing stretcher and tacks ends to opposite side of frame. Tacks strips to back of frame and weaves them through crosspieces to cover opening. Cuts webbing overlap with hand shears. Positions coil or sagless springs on webbing and fastens spring to webbing with metal clips, using clinching tool. Tacks twine to edges of frame opening and laces and ties twine to springs to stabilize and secure them in place. Cuts burlap or canvas to cover springs, places cover on springs, and tacks to edges of frame. Fastens border wire to springs, using metal clips. Bends thin wire band around outside of webbing for extra strength. Sews or tacks prepared edging over border wire, using needle and twine or tacks. Applies webbing or burlap to inside arm of upholstered furniture for strength.

8562-130 CASKET COVERER(furn.) DPT:684

GED: 2 SVP: 3 EC: 1 PA: M 3 4

Fits and glues fabric covering to outside of casket, using hand tools:

Brushes glue over sides, ends and top of casket. Fits fabric over glued surface, by pulling, pressing and smoothing cover over casket surfaces. Trims excess fabric at corners and seams with scissors. Folds edges of cover under bottom, and glues, tacks or staples it to bottom. Glues, tacks or staples trimming material over seams and exposed edges. Cuts and places paper cover in bottom of casket.

May attach hinges to fasten top frame to body of casket and top panel to top frame with screwdriver. May trim moulding on frame of casket to allow for thickness of covering material, using mitre box and saw. May attach corner protectors and exterior hardware to outside edges of casket.

8562-134 CASKET LINER(furn.) DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 3 4

Pads and lines interior of caskets:

Spreads layer of excelsior evenly over bottom of casket and spreads layer of cotton over excelsior. Cuts cloth from supply roll, according to dimensions of casket, using hand shears and tacks or staples cloth over bottom padding. Pads and covers sides and ends of casket with cotton and crepe. Cuts, and fits lining material to inside of casket lid, using tacks or staples to secure fabric.

8562-138 CHAIR UPHOLSTERER(furn.) DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4

Pads and covers sections of chairs, such as seats, arms, or backs, with fabric, using pneumatic stapler:

Obtains appropriate padding, covering material and chair frame, according to specifications. Fits foam or other padding to frame, and folds corners to shape article. Fastens padding to frame, using staple gun. Covers padding with pre-cut leatherette, vinyl, canvas or other material, by pulling and stretching fabric to fit frame. Secures fabric to underside of complete form using stapler. Cuts and trims excess fabric with scissors.

May attach label that indicates style number, colour, and fabric, using stapling machine. May cover buttons with fabric, using press, and attach to chair.

8562-142 MATTRESS MAKER(furn.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: M 3 4

Pads and covers spring assemblies to upholster mattresses, performing any combination of the following duties:

Moves specified padding, springs and covering fabric to work table by hand or using hand truck. Loads spool of wire into stapling machine. Spreads sisal, leno, burlap or other padding material on table. Positions spring assembly on material and spreads padding around top and sides of spring. Draws ends over edge wire and into coils, and fastens to edge wire, using stapler or wire clips. Places padded unit on covering material and lifts sides of covering over assembly. Pulls lever to lower press arm that compresses assembly. Staples covering to wood frame, using stapler. Lifts completed spring assembly from work table onto conveyor for packing.

May cushion corners of innerspring with felt. May tack dust cloth to bottom of frame. May sew cover over padding, using tape edge machine.

8562-146 PANEL COVERER(furn.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Pads and covers metal, wood or synthetic sections or panels of furniture, such as armrests and chair seats, by either of the following methods:

1. Selects section to be covered, type of padding and upholstery materials, according to specifications. Coats surface of section with glue, using brush or spray gun. Positions and presses padding on panel by hand. Stitches padding to panel with wire, using air-powered hand-stitching machine when glue is not used. Trims excess padding from edges, using scissors. Positions upholstery material over padding and pulls material taut to remove wrinkles. Fastens material to section, using staple gun or presses edges of material onto prongs protruding from back of section. Bends prongs around section, using hammer. 2. Places cover, right side down on form, under air press. Lays padding, fibre filling and backing panel over cover. Opens valve to lower press against backing panel to compress assembly. Trims excess padding and filler from panel, using scissors. Draws edges of cover over panel and tacks or staples edge to panel.

May staple, tack or paste material-content tag to backing panel. May attach upholstered panel or section to chair frame or table top, using hand tools.

8562-150 WIRE-BORDER ASSEMBLER(furn.) DPT:685
edgewire man.
GED: 2 SVP: 3 EC: 1 PA: M 4

Tends machine that attaches edge-wire frame to coil-spring assemblies with spiral springs for use in upholstered furniture:

Places spring assembly on table and positions edge wire on top of springs. Inserts wire in spring forming machine and depresses pedal to start and control speed of machine. Guides emerging spiral spring so that it laces and joins edge wire and tops of coil springs on ends and sides of assembly. Removes surplus spring and wire, using nippers, and crimps end with pliers. Turns spring assembly over and repeats same process on bottom side.

8562-154 ASSEMBLER, CAR SEATS(furn.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Assembles padded automobile and truck seats and backs, performing any combination of the following duties:

Positions bottom of back seat cover, padding and springs on bed of press. Inserts wire in seam around edge of cover. Pushes pedal to start press that compresses springs. Pulls cover taut to remove wrinkles and attaches it to springs, using pneumatic hog ring pliers. Turns valve and pulls lever of steam press to smooth cover of completed article. May depress springs manually during assembly.

8562-158 BACK PADDER(furn.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles padded wooden backs for chairs:
Covers wooden backplate with padding material, such as wood fibre, cotton, or foam rubber, using hand stapler or staple gun. Inserts end of padded backplate into stretched cover. Positions cover on bed of press and pushes pedal to lower ram that forces entire padded plate into cover. Staples edges of cover to backplate. Trims excess material from edges with scissors. Bore holes in backplate, usingawl.

May insert and align cardboard strips between cover edges and bottom edge of backplate.

8562-162 BOX-SPRING MAKER(furn.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Assembles box-springs by performing any combination of the following duties:

Fastens coil springs to slats of wood frame, using pneumatic hand stapler. Attaches edge-wire to border coils with metal clips, using pliers, and interlaces coils with twine to secure springs in position. Measures and cuts padding and fabric, using tape measure and shears. Spreads padding and fabric materials over coils and staples them to frame.

May cut and staple dust cloth to bottom of frame.

8562-170 SPRING ASSEMBLER(furn.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Assembles coil springs in wire frames to form box spring units for beds or chairs:

Lays bed of crossed wiring in jig and fastens springs to wiring. Fastens tops of coils together with tie wires or metal clips. Clips edge wire to tops of outside coil springs, using power clipping tool. Cuts protruding ends of wire, using wire cutters.

May staple spring assembly to wooden frame. May install spring assembly in seat section of frame by driving turned down ends of lower cross-wires into pre-drilled holes, using hammer.

8562-174 FILLING-MACHINE TENDER(furn.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends filling machine that compresses and covers spring assemblies to make mattresses or cushions:

Spreads precut and weighed cotton or other padding on floor of compression box of filling machine. Places spring assembly on top of padding and spreads more batting over spring unit, stuffing excess at ends into springs. Positions cushion or mattress cover over discharge spout. Pulls lever to contract sides of box that compresses spring unit. Depresses pedal to release ram that forces spring assembly from box and inserts it into cover.

May operate sewing machine to stitch open side of cover. May build up layers of batting in compression box to make crib pads and bunk or cot mattresses. May change machine guides and parts, according to specifications, using hand tools. May be designated according to item filled.

8562-178 PAD ASSEMBLER, HEAT SEAL PRESS(furn.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles seat, backrest and side pads for metal furniture and baby carriages, using pneumatic heat seal press:

Positions specified material, such as sheet plastic, foam-rubber padding, or masonite, on base of pneumatic heat seal press. Depresses pedal or pushes handle to lower press onto materials. Removes excess covering with shears, or tears off excess by hand. Releases pedal, or pulls handle to raise press. Examines sealed cushion for conformity to standard.

May assemble backrest pads or arm covers, using pliers, scissors, glue, and wire.

8562-182 UPHOLSTERY TRIMMER(furn.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: M 4

Applies trimming to upholstered furniture:

Attaches braid, binding, skirts, or other trimming material to upholstered frames, using glue, staples, nails or tacks. Pierces edges of fabric cover of upholstered furniture with pick or skewer and lifts edges of cover over heads of attaching nails or tacks to conceal them.

8562-186 UPHOLSTERER HELPER(furn.) DPT:687
GED: 2 SVP: 1 EC: 1 PA: M 4

Helps upholsterers to make, rebuild or repair furniture and boat or car seats:

Removes worn covering material and padding from frames, using scissors, or rips material out manually. Pulls tacks and clips from

frames, using tack puller. Measures and cuts covering materials, using tape measure and shears. Assists in rebuilding or repairing fabric boat and automobile convertible tops. See also definition for term title, 02-160 HELPER (any ind.).

May remove stains from upholstery, using cleaning fluid. May operate sewing machine to join pieces of covering material or sew material by hand. May tack, glue or nail trim to upholstered frame.

8562-199 OTHER UPHOLSTERERS

This group includes upholsterers, not elsewhere classified; for example, those who operate machines that stitch gauge backing to padding for use in automobile seat upholstery. A typical example of an occupational title covered by this residual group definition is, Fales-Machine Operator(furn.)

8563-SEWING MACHINE OPERATORS, TEXTILE AND SIMILAR MATERIALS

This unit group includes occupations concerned with machine- sewing of textiles, leather, fur, synthetic and similar materials to produce or repair items; such as, garments, draperies, bedding, carpets, tents, harnesses and felt goods. Activities include: beading, binding, button-holing, edging, hemming, joining, patching, scalloping and tucking, which normally occur in production operations. Occupations concerned with sewing footwear are classified in Unit Group 8561, SHOEMAKING AND REPAIRING OCCUPATIONS

8563-110 MENDER, TEXTILE PRODUCTS(textile) DPT:684

GED: 3 SVP: 4 EC: 1 PA: L 4 7

Operates machines to mend defective stitching or tufting on articles, or on material used in the fabrication of articles; such as, bedspreads, bath mats, robes, or rugs:

Mounts rolls of material in brackets of examining frame or places bundles of articles on work table. Examines material or article for defects and ravel defective fringing, stitching, or tufting by hand or using razor blade. Operates equipment, such as sewing machine, mending gun, and fringing machine to replace defective tufting, fringes or seams. Cuts excess thread from seam ends, tufts, and fringes, using scissors.

May clean spots and dirt from articles, using soap and water or cleaning fluid. May repair a particular type of product and be designated accordingly; for example, Material Mender
Mender, Tufted Carpets

8563-114 SEWING-MACHINE OPERATOR(any ind.) DPT:684

joiner; sewer, machine.

GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Operates single- or multiple-needle sewing-machine to join, gather, hem, reinforce, decorate, or attach fasteners to textile products; such as, garments, gloves, hats, awnings, carpets, bags, and upholstery:

Selects thread according to specifications or colour of fabric. Places spool on spindle and draws thread through machine guides, tensions, and needle eye. Inserts bobbin into shuttle and draws thread through slot in shuttle wall, or draws thread through guide and looper eye. Presses knee lever, depresses pedal, or moves hand lever to raise presser foot or spread feed cups. Positions parts to be sewn under presser foot and needle, and lowers presser foot. Starts, stops, and controls speed of machine with pedal or knee lever and guides parts under needle, following edges, seams, or markings on parts. Observes stitching to detect defects and notifies repairman of machine malfunctions. Cuts excess material or thread, from items, using blade attached to machine, or scissors. Lubricates machine, using oil can.

May change needles, and secure modifying attachments to machine. May be concerned with operating a specific type of machine, or sewing a particular part or article and be designated accordingly; for example, Elastic Attacher
Glove Sewer
Hemstitching-Machine Operator

Multi-Needle-Machine Operator
Seamer
Single-Needle Operator
Sleeve Maker

8563-118 EMBROIDERY-MACHINE TENDER(textile)

DPT:685

automatic-embroidery-machine tender.

GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Tends machine that automatically embroiders designs on fabric: Threads roll of perforated cardboard that controls stitching operation through guide rollers and attaches end to automatic control mechanism or inserts punched cards in machine. Aligns pointers on cloth frame with marks on machine chassis to position frame within prescribed stitching action limits. Turns handwheel to make first stitch, observing needle and shuttle action, thread tension, and alignment of stitch. Starts machine and observes operation to detect malfunction. Marks stitching errors with pins or tape. Makes adjustments, such as replacing or rethreading needles and inserting new shuttles.

May direct or assist workers in machine set up. May operate semi-automatic machine to embroider decorative design on fabric. May operate a specific type of equipment and be designated accordingly; for example, Embroiderer, Pantograph
Stitcher

8563-122 RUG SEWER(textile) DPT:685

rug joiner.

GED: 2 SVP: 4 EC: 1 5 PA: M 4 7

Tends travelling sewing machine that joins rugs into continuous lengths:

Butts rug ends to be joined between tension bars of holding mechanism, by hand. Secures butted rug ends together by depressing lever to activate holding mechanism. Repositions rug ends in holding mechanism under needle of sewing machine. Starts sewing machine and auxiliary cutting device that joins rug ends and removes excess material while moving along rail across width of rug. Observes sewing and trimming operation to detect malfunctions. Releases joined rugs by pressing button. Rethreads machine and performs routine maintenance, such as replacing needles.

8563-126 SEWING-MACHINE TENDER(any ind.) DPT:685

sewing-machine operator, automatic.

GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends one or more sewing machines that automatically seam continuous lengths of cloth; or automatically join, reinforce or decorate textile articles, such as garments, draperies, and rugs; or automatically perform specific sewing functions, such as hemming, quilting, tufting, tacking, embroidering, pleating, and buttonhole making:

Places spools of thread on thread holders and draws ends through guides, tensions, and needle eyes. Inserts bobbins into shuttles and draws threads through slot and shuttle wall or draws threads through guides and looper eyes. Places roll of material on brackets at entry end of machine and threads material through feed rollers and guides. Moves lever to raise pressure foot, draws material under needles, and lowers presser foot. Presses pedal or button to start machine. Patrols work area when operating more than one machine to detect defective stitching, breaks in thread, or machine malfunctions. Rethreads machine, replaces defective or broken needles, or notifies repairman of machine malfunction. Selects supplies, such as fasteners and thread according to work ticket or colour of fabric.

May remove rolls or trucks of material from discharge end of machine. May specialize in working with a particular type of machine or article or filling a specific sewing function and be designated accordingly; for example, Buttonhole Maker
Quilting-Machine Operator
Sewing-Machine Operator, Zipper
Tufting-Machine Operator

8563-199 OTHER SEWING MACHINE OCCUPATIONS, TEXTILE

This group includes textile sewing-machine operators, not elsewhere classified; for example, those who sew tape and label on mop heads. A typical example of an occupational title covered by this residual group definition is:

Mop-Head Sewer(misc. prod. fab., n.e.c.)

8566-INSPECTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR AND LEATHER PRODUCTS

This unit group includes occupations in inspecting, sorting, grading and sampling work as described under the term titles, 02-170 INSPECTOR(any ind.); 02-150 GRADER(any ind.); and 02-330 SAMPLER(any ind.); concerned with quality control activities in the fabrication, assembly, and repair of textile, fur and leather products.

8566-110 FUR SORTER(fur goods; leather tan. & fur dress.) DPT:387

fur grader; fur matcher.

GED: 3 SVP: 6 EC: 1 PA: L 4 7

Sorts fur skins into single garment bundles according to shade, size, pattern and density of fur:

Makes visual comparison of pelts with sample pelt of each grade. Stokes fur to feel its density, to reveal its undercolour and to judge height of fur. Selects those pelts that match or blend and have the same density and length of fur, and places in separate bundles.

May estimate number of pelts required for particular garment to be manufactured. May store matched and dressed pelts in stockroom and keep inventory of pelts on hand. May sell pelts to customers.

8566-114 LEATHER GRADER(garment & fabric) DPT:687

GED: 3 SVP: 5 EC: 1 PA: M 4 7

Examines and grades leather hides and various animal skins to make articles such as, garments, gloves and mittens, according to specifications:

Visually examines leather to detect defects; such as scars and holes, and feels leather to detect thin and thick areas. Grades and stacks leather according to thickness, colour and quality. Cuts out defective parts, using knife. Weighs stacks of leather and records information; such as, weight, quantity and quality.

May pass leather through a measuring machine to determine size. May direct other workers. May spread hide or skin over illuminated draughting table to examine leather for defects.

8566-118 INSPECTOR, LEATHER GOODS(leather goods) DPT:584

GED: 2 SVP: 4 EC: 1 PA: L 4 7

Examines handbags, wallets and similar leather products for defects, such as missing seam stitches, variation in colour and blemishes:

Trims excess material and thread from articles, using clippers. Wipes spots and stains from articles, using cleaning solution and cloth. Places inserts, such as coin purses, combs, and tissue paper into articles. Attaches inspection tag to articles and records articles inspected. Groups articles of same grade, size, style and colour, and stacks them in lots.

8566-122 SHOE INSPECTOR(shoes) DPT:584

GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Inspects finished and partially finished shoes and shoe parts for imperfections:

Examines parts of or complete shoes for defects; such as, uneven or broken stitching, lining wrinkles, faulty colouring, or excess cement. Marks faulty parts or shoes with pencil or chalk, or attaches repair tag and routes them to departments responsible for repair. Makes minor

repairs, using hand tools and power sander. Records number of defective shoes and shoe parts.

May sort and grade parts of leather shoes; such as, soles, shanks and lasts. May pack shoes or shoe parts in containers for further processing, storage or shipment. May be designated according to area of work, or part of shoe inspected; for example,

Fitting-Room Inspector

Lasting Inspector

8566-126 DRAPER(garment & fabric; knit goods) DPT:684

garment finisher.

GED: 2 SVP: 4 EC: 1 PA: L 4 7

Verifies fit of garment on form, marks location of trimmings, fasteners and defects, and presses garment:

Positions garment on sized model form and examines fit and hang of garment for conformity to model. Indicates defects; such as, wrinkles, bulges, or puckers, and positions of fasteners and trimmings; such as, belts, buttons, sashes and snaps, by pinning garment or marking with chalk. Presses finished garments, using hand iron to remove wrinkles, flatten seams, and give shape to garment. Places garment on hanger and stuffs garment manually with tissue paper to enhance appearance.

8566-130 INSPECTOR, GARMENT(garment & fabric; knit goods) DPT:687

GED: 2 SVP: 4 EC: 1 PA: L 4 7

Inspects finished garments for workmanship and conformance to standards, performing any combination of the following duties:

Spreads garments on table or draws them over inspection forms.

Visually examines garments for defects in assembly and finish; such as, puckers, bulges and splits in seams, lining and collar settings, misplacement of pockets, loops, snaps, buttons and button holes, faulty pressing, runs and variations in colour. Marks defective garments, using chalk, thread, tags or pins, for reworking or removal from stock. Measures garment at designated places, using tape measure or ruler, or following markings on table, to determine conformity to standard size. Trims excess material or thread ends from garment, using scissors. Removes lint, threads, spots and stains from garments, using brush or lint remover and cleaning fluid. Attaches identification tags, price tickets or labels to garments and compares with hanger ticket to ensure correct marking of style, size and material content. Smooths, folds and stacks garments on table or hangs them on rack to avoid wrinkling. Records number of garments accepted or rejected.

May hand sew buttons to complete garment when buttons cannot be machine-fastened. May be designated according to phase at which inspection takes place, or according to type and part of garment inspected; for example,

Final Inspector, Garments

Inspector, Foundation Garments

Inspector, Jackets

Inspector, Shirts

8566-134 CUSHION-AND-COVER INSPECTOR(furn.) DPT:587

GED: 2 SVP: 3 EC: 1 PA: L 4 7

Inspects finished upholstered cushions and furniture covers for defects and conformance to specifications:

Marks defects, using chalk, tag or adhesive colour-coded tape. Rips out faulty seams and returns rejected items for re-working. Measures valances with yardstick to verify conformity to specifications. Records number of defects.

May repair minor defects, using needle and thread. May correct irregularity of shape or surface, using pick. May be designated according to product inspected; for example,

Cover Inspector

Cushion Inspector

8566-138 INSPECTOR-GRADER, SECONDS(garment & fabric; knit goods) DPT:587

GED: 2 SVP: 3 EC: 1 PA: L 4 7

Inspects, sorts and packages repaired garments according to quality, size and style: Sorts and stacks repaired garments as first or second quality, according to size, style, order number and types of defects. Examines garments for defects in assembly and in material. Trims excess material and thread ends from garments, using scissors.

Removes trade labels from second-quality garments. Folds, bags and boxes garments, according to requisition. Records size, style and number of seconds packed. Stacks boxes on hand truck.

8566-142 EXAMINER, GLOVES AND MITTENS(garment & fabric) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Inspects finished gloves and mittens for defects and grades them according to specifications:
Examines gloves and mittens for flaws in material, variations in colours, and pulls at seams to detect defective stitching. Separates articles with stitching defects for resewing. Pairs articles of same grade, size, style and colour. Staples together pairs of dress gloves. Grades gloves and mittens according to weight, evenness of stitching or colour shading and stacks them in lots for packing.
May cut threads from seam ends, using shears, and draw gloves or mittens between rotating brushes to remove loose threads. May verify quality and fitness of article by stretching it over form. May tag gloves and mittens according to size and quality. May keep production records.

8566-146 FUR SORTER, HAT(fur goods) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Divides small fur pelts, such as mink tails, into lots, according to colour, size, density of fur, and number required for making each hat: Spreads fur pelts on table. Removes matted or greasy furs and shreds of skin. Examines and matches fur pelts into lots and wraps each lot in tissue paper prior to manufacture of hats.

8566-150 INSPECTOR, HAT(garment & fabric) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Inspects finished or partially finished hats for defects, damage and conformity to standards:
Examines hats for irregularities; such as, faulty colouring, shaping, sizing, stitching and improperly placed bands or ornaments. Returns damaged hats to originating department for repair. Trims excess material and loose or protruding threads, using scissors. Removes spots or stains, using sponge and water. Brushes surface of hat to remove dust or foreign matter. Places hats on racks or stacks them on table for packing or further processing.
May apply stiffening solution to inside of hat. May sew in missed stitches. May pack hats in containers, line boxes or cartons with tissue paper and mark contents on outside of containers.

8566-154 INSPECTOR, MATTRESS(furn.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: H 4 7

Inspects finished mattresses and box-springs for conformance to specifications, finish and appearance:
Examines mattress and box-spring surfaces for puckers, irregular corners and matching of colours. Measures length and width of mattress and box-spring to verify conformity with specifications, using tape measure. Cuts loose threads and fabric ends from mattresses meeting standards and removes defective mattress or box-springs from conveyor. Blows dust and loose threads from surface folds, using air gun.
May wrap mattresses and box-springs by hand, using kraft paper, and seal with gummed tape. May stamp identifying information; such as, size, colour and serial or lot number, on package.

8566-158 INSPECTOR, PARACHUTES(garment & fabric) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Inspects parachutes and parachute parts at end of manufacturing process to detect flaws in materials and workmanship:
Spreads parachute or part, such as canopy and shroud webbing, on arborite or glass-topped table or over fluorescent light. Examines closely for minute flaws, such as defective material and stitching, crooked hems, and tears. Pulls on shroud lines and suspension cords to ensure tightness of knots. Marks defective stitching, hems, seams, and taped edges. Pins pieces of coloured cloth over defective areas and stacks rejected parachutes aside. Folds flawless parachutes for shipment.

8566-162 SAMPLE CLERK(garment & fabric) DPT:587
swatch clerk.
GED: 2 SVP: 2 EC: 1 PA: L 4

Collects and catalogues samples from goods, such as knitted material, hosiery or other fabric:
Marks each lot to identify goods, such as bolts of cloth, from which samples were cut. Selects samples according to specifications and examines them to ensure conformance to standard. Records lot number from which sample was taken. Staples sample to card for filing or slips sample under elastic band attached to cardboard display. May trim samples, using scissors.

8566-199 OTHER INSPECTING, GRADING AND SAMPLING OCCUPATIONS, TEXTILE, FUR AND LEATHER PRODUCTS

This group includes textile, fur and leather products inspectors, graders and samplers, not elsewhere classified; for example, those who examine altered garments to ensure quality workmanship, and inspect and sort used clothing gathered for welfare agency. Typical examples of occupational titles covered by this residual group definition are: Garment-Alterations Examiner(garment & fabric; ret. trade) Sorter, Used Clothing(social wel.)

8568-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING, TEXTILE, FUR, AND LEATHER PRODUCTS

This unit group includes occupations in labouring and other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), which are concerned with fabricating, assembling and repairing textile, fur, and leather products. Activities include: opening bales of textile materials, cutting materials into lengths, trimming threads from garments, impregnating hats to impart finish, framing material for machine embroidery, stuffing pillows, comforters, and padded sports equipment, removing blemishes from finished shoes, and staining edges of leather belts.

8568-110 CONE DRYER, HAT(garment & fabric) DPT:686
whizzer.
GED: 1 SVP: 2 EC: 1 4 PA: L 4

Places felt hat cones in centrifugal extractor that removes excess water from hat cones after water blocking:
Removes felt hat from tank of cold water. Pulls hat over hat-shaped holder on machine, or places it in machine basket. Presses button or depresses pedal to start machine spinning, to remove excess water from hat. Presses button or releases pedal to stop machine and removes hat.
May feel hat during drying cycle to ascertain degree of dampness. May place hat cone on conveyor that carries it through drying room to complete drying operation.

8568-114 GLOVE-TURNER-AND-FORMER, AUTOMATIC(garment & fabric) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Feeds and offbears gloves to and from automatic turning and forming machine:
Positions hand-shaped forms of pre-determined size in slots of rotating disk of machine and lowers clamps to secure forms. Presses button to start machine and pulls each glove over form, covering multiple forms in single revolution of disk. Removes turned and pressed gloves from exit conveyor of machine. Examines gloves for defects. Pairs and stacks gloves ready for packaging.
May cut threads, using scissors. May fold thumb inside palm. May turn gloves or mittens right-side out, manually, using glove turning device and be designated accordingly,
Glove Turner, Hand

8568-118 HAT TREATER(garment & fabric) DPT:686
GED: 1 SVP: 2 EC: 1 4 PA: L 4

Applies sizing liquids, such as shellac, lacquer and paint, to felt or straw hats or hat parts, to stiffen, waterproof, or impart finish: Pours premixed liquid into container, or thins liquid according to specifications. Applies prepared liquid to hat or hat parts, using brush, sponge, or spray gun, by dipping in liquid, or by feeding articles between rollers of liquid coating machine. Places articles in machine that spins them to remove excess liquid. Places articles on racks to dry, or loads them on to conveyor that carries them through drying room. May be designated according to type of hat or hat part treated; for example, Brim Stiffener Hat Stiffener Straw-Hat Dipper

8568-122 LABEL-HEAT TACKER(garment & fabric) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Feeds heat-tacking machine that affixes glue-impregnated trade- mark labels to shirt yokes: Selects labels according to specifications. Loads labels in feed hopper of machine preparatory to labelling. Depresses button to heat machine. Places shirt yoke on bed of machine and depresses foot pedal to lower label-holding arm that affixes label to shirt yoke. Places labelled yokes for shirt assembly. Cleans machine, using cloth and cleaning solution.

8568-123 PERFORATING-MACHINE TENDER(garment & fabric) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Tends perforating machine that punches holes in hat parts to make ventilating, decorative and assembly perforations: Positions hat part against guide or on mould under single or multiheaded punch in ram of perforating machine according to specification markers. Depresses pedal to clamp part in bed of machine. Manipulates lever to lower ram-punch and perforate part. May tend machine that automatically feeds part across machine bed as punch perforates part. May be designated according to part perforated; for example, Brim Slotter Sweatband Perforator

8568-124 PINKING-MACHINE TENDER(garment & fabric; shoes) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 3 4

Tends machine that cuts serrated edges on garment seams or footwear parts to prevent ravelling or to decorate: Positions raw edge of seam, hem, or part between pressure and pinking rollers of machine. Depresses pedal to start machine. Feeds raw edge between rollers and guides to serrate material. May tend machine equipped with a lever-type blade to cut sample swatches of cloth.

8568-126 PRESSING-MACHINE FEEDER(garment & fabric; knit goods) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Feeds textile products such as garments, hosiery, or folded sheets into machine that presses articles preparatory to packing: Starts machine and adjusts steam pressure and tension of conveyor belt, by turning hand controls. Places garment, hosiery or folded sheets on conveyor belt. May remove articles as they emerge from pressing machine and place them on handtruck or tray.

8568-127 SOLE FLEXER(shoes) DPT:686
GED: 1 SVP: 1 EC: 1 5 PA: L 4

Bends shoe soles to create sole flexibility: Feeds leather outsoles or insoles through machine equipped with series of powered rollers that bend outsoles or insoles to make them more flexible. Catches soles coming from machine and stacks them on rack or handtruck for further processing. Pushes truck or wheeled rack to next work station.

8568-130 ANTI-SQUEAK FILLER(shoes) DPT:687
cushion cementer.
GED: 1 SVP: 2 EC: 1 PA: L 4

Applies liquid coating to shoe parts, or cements cushioning material between parts, to prevent shoe squeaking due to friction or wear, using any of the following methods: 1. Brushes coating of liquid chalk or wax on parts, such as heel bases, flares and outsoles to prevent squeaking. 2. Applies cement with fingers or brush onto pieces of cloth, leather, or sponge rubber, and positions pieces between shoe parts, such as insole, midsole and steel box toes. 3. Presses strips of gummed tape on steel shoe shanks.

8568-134 BAG LINER(misc. prod. fab., n.e.c.) DPT:687
doubler.
GED: 1 SVP: 2 EC: 1 5 PA: L 4

Lines cotton and jute bags with cotton or plastic liners: Unloads bags from handtruck and stacks them on doubling table. Adjusts spacing between two rods projecting horizontally from side of table according to size of bag, using wrench. Slides plastic or cotton liner on to horizontal rods and pulls outer bag over liner(s) by hand to produce double or triple bag. Carries lined bags from doubling table and stacks them on handtruck. Transports stacks of bags between work areas, using handtruck.

8568-138 BUCKLE SHAPER(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Covers and shapes buckles, using either of the following methods: Pushes reinforcing wire through tubular fabric. Cuts off material to match length of reinforcing wire, using scissors. Inserts covered wire into bending device and pulls lever to form one side of buckle. Repeats action to form other side of buckle. Inserts metal joint to cover buckle ends, and positions and secures prongs, using pliers. Cuts piece from strips or sheets of brass according to size of buckle blanks, using shears. Positions and shapes brass over wooden buckle blank, and presses brass with fingers to ensure adherence to blank. Trims excess brass so as to uncover buckle center, using knife. Folds in and shapes edges, corners, and center with fingers to give buckle final shape. Solders joints of buckle, using soldering gun.

8568-142 BUFFING-DISK ASSEMBLER, CLOTH(non-metal. min. prod., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Assembles layers of cloth disks used to make fabric buffing wheels: Inserts rod in centre hole of stack of disks. Turns disks so weave in cloth layers is at different axis to those of adjoining layers, to reduce fraying. Counts specified number of disks required to make one wheel, while turning them. Removes disks from rod and stacks them into carton or in tray. Lays paper strip between stacked disks required to make one wheel. May sew cloth disks together to make fabric buffing wheels, using sewing machine.

8568-146 LABOURER, DRAPERY(garment & fabric) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Performs any of the following or similar duties in fabrication of curtains and draperies, working as a member of a team: Spreads fabric and lining on cutting table according to dimensions, continuity of printed design, and model to be processed. Places lining over drapery panel. Hangs resulting assembly over rack preparatory to seaming, respecting size, continuity of pattern and model. Turns lined draperies right-side-out, by hand, and hangs them on rack preparatory to pleating. May fold and bag draperies. May place information on labels.

8568-150 EDGE STAINER, BELT(leather goods) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Stains edges of leather belts, using dye and sponge: Inserts individual belt between holding bars of frame and secures frame to table edge, using wooden blocks. Taps belt with wooden block to align exposed surface. Applies liquid dye or stain to belt edges, using sponge. Wipes off surplus dye, using rag. Removes belts

from holder and reverses position in frame for staining of other edge or places them in box for further processing.

8568-154 EMBROIDERY-FRAME MOUNTER(garment & fabric; knit goods) DPT:687
spanner.

GED: 1 SVP: 2 EC: 1 PA: L 4

Performs the following duties related to machine embroidering of fabrics or garment parts:

Clips garment piece to top of frame. Pulls fabric taut and clamps or pins overhanging material under frame to maintain tautness. Adjusts frame on machine and aligns needles and shuttle rails, using spanner. Pins applique cloth strips over spanned fabric. Cuts threads and excess applique material from embroidered garment section before removing pieces from frame. Threads needles, replaces depleted bobbins, and cuts threads between needle and embroidered fabric.

8568-158 FINAL ASSEMBLER, GARMENT(garment & fabric) DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Prepares manufactured garments for final inspection:

Closes slide fasteners, buttons and snaps. Draws belt through belt loops and fastens buckle. Ties bows. Trims ends of threads protruding from garments, using scissors.

May carry out preliminary inspection of buttoned coats on hanger to ensure straightness of overlays indicating correct alignment of buttons and sets aside unsatisfactory coats.

8568-162 GARMENT FOLDER(garment & fabric) DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Folds garments manually, prior to shipping:

Inspects garments to detect and mark defects, using contrasting coloured thread and needle, and discards defective garments. Spreads garment on table. Positions board over article and folds garment over board. Secures garment, using pins, and removes board from folded garment.

May sew labels on article, using sewing machine. May insert folded articles in polyethylene bags, seal opening, using tape or heat sealer, and place bags into boxes or cartons for shipping. May fold a specific type of article and be designated accordingly, Handkerchief Folder

8568-166 GLOVE LINER(garment & fabric) DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Inserts cloth linings in gloves or mittens:

Positions and secures specified size of glove or mitten form on stand. Unties bundles of linings, and gloves or mittens and places in proximity to glove form. Places lining on form and pulls glove or mitten over lining. Removes lined glove or mitten from form.

May stack and bundle finished gloves and pack bundles into carton. May trim thread ends from lining, using scissors. May write information on packing label; such as, quantity, size, style and colour. May close and seal cartons, and attach label, using glued kraft paper.

8568-170 GLOVE PAIRER(garment & fabric) DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Pairs and matches gloves or mittens prior to packaging:

Matches right and left hand gloves or mittens according to size, style, code number, and colour. Tacks each pair of gloves or mittens together by hand or using tacking machine, or folds and staples labels on cuffs of paired gloves. Stacks gloves or mittens in specified lots. May fold thumb inside palm of glove or mitten before pairing. May pack gloves in boxes or bags.

8568-174 HAT BRUSHER(garment & fabric) DPT:687

hat duster.

GED: 1 SVP: 2 EC: 1 PA: L 4

Removes dust, lint, and loose fibres from felt hats after rough or final pouncing operations, using hand brush and air hose:

Fits hat over hat block on turntable, and depresses pedal to start turntable rotating. Holds brush against outside surface of hat, or

presses valve on air hose to direct air over hat surface, to remove dust from hat. Releases pedal, removes hat from block, and dusts inside of hat, while holding it with hand. Examines hat for cleanliness and places aside for further processing.

May tend machine that flexes hat brims and raises nap on brim, to improve pliability and appearance. May prepare and attach code labels and trim feathers to hats.

8568-178 HAT-LINING CEMENTER(garment & fabric) DPT:687

hat liner.

GED: 1 SVP: 2 EC: 1 PA: S 4

Cements linings into crowns of hats:

Lifts sweatband in hat and brushes cement on inside of hat crown and underside of sweatband. Positions lining in crown and presses with fingers to smooth and join lining to crown and sweatband. Repositions sweatband in hat.

8568-182 LABOURER, BOOT AND SHOE(shoes) DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 3 4

Performs any combination of the following duties in a shoe factory:

Treats lasts with substances, such as wax, powder, or grease, to prevent lining from sticking at box toe and counter when shoe is lasted. Off-bears products of leather-cutting and shaping machines. Stacks and stores leather parts according to size and shape. Gathers, sorts and trims salvageable leather scraps. Transports shoes in various stages of completion to workers, for processing. Places plastic covering over partially assembled shoe to protect shoe-uppers during some stages of production. Removes lasts from assembled shoes, and cleans wooden shoe lasts by pressing them against rotating abrasive wheel to remove dried cement. Sorts lasts, patterns and templates according to size, and places them in bins or on shelves. Sprays shoes with disinfectant, using spray-gun. Threads laces through eyelets, or buckles straps of finished shoes. Pairs shoes and ties them. Sweeps floors and cleans work benches.

May be designated according to task performed; for example, Scrap Sorter
Shoe Pairer

8568-186 LABOURER, COATING AND EMBOSSING(linoleum prod.) DPT:687

GED: 1 SVP: 2 EC: 1 PA: H 3 4

Performs any combination of the following duties in manufacture of batting, padding and coated vinyl material:

Transports rolls of material, engraved printing or embossing rolls, and drums of liquid plastic and print colour, to and from machine, using handtrucks. Positions rolls to let-off and wind-up racks, using hoist. Joins ends of material to form continuous rolls, using automatic sewing device. Observes material at wind-up rack, and notifies operator of processing defects. Starts rolls winding onto core, changes knives and threads vinyl plastic sheet into machine. Scrapes and cleans equipment, removes scrap material, and sweeps area.

May measure width of rolls of material and identify them with colour code card. May weigh rolls of material before and after coating processes. May feed and off-bear coating-and-embossing machine.

8568-187 LABOURER, FURRIER SHOP(fur goods) DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Performs any combination of the following duties in furrier shop:

Dampens skin side of furs, using brush and water, and stretches skins manually to prepare skins for cutting. Carries skins to work tables as directed. Brushes sections of unfinished garments with water-dampened brush to smooth fur, remove dust and loose hairs. Keeps work area clean and places scraps of fur in container.

May assist in packing and shipping fur garments and in loading delivery trucks.

8568-190 LACER(sport. & toy) DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Laces sporting equipment such as footballs, volleyballs, and hockey gloves.

Pushes end of fabric, plastic, or leather lace through eyelets of article, using awl or lacing needle. Pulls lace through eyelets. Repeats

operation and ties and cuts lace, using scissors, after article is laced as specified. Pushes cut ends under lacing to secure and finish.

8568-194 LAY-UP MAN(garment & fabric) DPT:687
cloth spreader.
 GED: 1 SVP: 2 EC: 1 PA: M 4

Spreads layers of cloth on table preparatory to marking and cutting parts for such articles as garments, upholstery covers, bedspreads, and toys:

Mounts roll of cloth on reel at end of table, or movable carriage. Threads end of cloth through rollers. Unwinds material from roll or moves roll on movable carriage to spread first layer of cloth on table. Pulls and places cloth to align layer with marks on table, or edge of table. Repeats spreading action until required number of layers are on table. Clamps edges of cloth to table or stitches layers of cloth together to facilitate cutting or handling, using awl and twine. Keeps record of fabric lengths cut.

May lap ends of cloth at markings, and carry folded cloth to storage bin. May position pattern on top layer of cloth ready for cutting. May spread cloth, using spreading machine.

8568-198 LENGTH CUTTER, HAND(any ind.) DPT:687
 GED: 1 SVP: 2 EC: 1 PA: M 4 7

Cuts single or multiple layers of materials or articles, such as cloth, narrow fabrics and rugs to specified lengths, using shears, hand or powered knife or circular saw:

Mounts bolt of material on rack manually or with hoist, or positions handtruck of cloth, carpeting or other material at end of cutting table. Unrolls material from spool, bolt, or handtruck, and spreads material along calibrated scale on cutting table. Smooths and aligns edges of material. Cuts material to specified lengths. Rolls or stacks lengths of cut material and places them on handtruck.

May wind strand of material, such as elastic, braid and ribbon around reel or pegs on cutting table and cut material at specified points, using scissors or knife. May pull material directly from end of machine to table prior to cutting. May tie lengths of material into bundles. May be designated according to material or product cut; for example,

Blanket Cutter, Hand(textile)
 Carpet Cutter, Hand(textile)
 Cloth Cutter, Hand(garment & fabric; textile)
 Elastic Cutter, Hand(garment & fabric; textile)
 Ribbon Cutter, Hand(garment & fabric)

8568-202 LINK CUTTER(knit goods) DPT:687
clipper.
 GED: 1 SVP: 2 EC: 1 PA: L 4

Separates circular or flat knitted fabric into lengths of garment parts prior to cutting or sewing:

Folds fabric in regular sequences, placing connecting rows of loops on fold. Cuts thread ends, using scissors. Pulls thread to ravel- connecting rows. Turns pile of knit tubing and repeats raveling until all pieces are separated.

May examine, sort, count, and tie articles into bundles, according to style, colour, and size. May use winding beam to unroll connecting threads, pressing button to actuate winding beam and guiding thread on beam to prevent tangling. May cut several stitches with scissors and unravel rows of excess fabric and be designated accordingly,
 Raveler

8568-206 SHOE CLEANER(shoes) DPT:687
shoe polisher.
 GED: 1 SVP: 2 EC: 1 4 7 PA: L 4 7

Cleans and polishes shoes before or after finishing, performing any of the following duties:

Holds and turns shoe against revolving brush to remove dust and dirt from surface prior to or after finishing. Cleans shoes by hand, using brush and compressed air gun. Places shoes on rack in spray booth and sprays with warm water to remove dirt. Removes foreign matter, such as grease and cement from finished shoes, using art gum, knife, and cleaning fluids. Restores colour to blemishes on shoes by applying prepared colours with cloth, hand spray, or crayon. Applies prepared filler to fill cracks and scratches on shoe. Sprays polish on white leather shoes and rubs shoes with rag to give glossy and finished appearance. Applies bleaching liquid to outsoles of lasted shoes to lighten colour,

using brush or cloth. Stains, waxes and polishes outsoles and heels of shoes, using spray gun, power brush and buffing wheel.

May be designated according to functions performed; for example,
 Blemish Remover
 Bottom Finisher
 Brusher
 White-Shoe Polisher

8568-210 SHOE-PARTS DIPPER(shoes) DPT:687
dipper.
 GED: 1 SVP: 2 EC: 1 4 PA: L 4

Dips shoe parts in various solutions to harden, insulate or stiffen leather, as required for further processing:

Places heels, insoles or uppers and other shoe parts in containers, such as wire basket, rack or dipping frames. Lowers containers into tank containing treating solution, using power hoist. Raises containers and allows excess solution to drain from shoe parts. Places containers in drying area, or removes treated parts from containers and places them on drying rack.

May feed shoe parts or uppers onto conveyor leading to muller (leather softening machine). May apply softening solution to uppers, using cloth or sponge. May be designated according to part processed; for example,
 Heel Doper
 Insole Dipper
 Sole Wetter

8568-214 SPIKE INSTALLER, GOLF-SHOE(shoes) DPT:687
 GED: 1 SVP: 2 EC: 1 PA: L 4

Attaches spikes to golf-shoe soles and heels by either of the following methods:

1. Threads spikes into metal inserts that have been moulded into plastic soles and heels of completed shoes. Inserts spike head into socket, and presses shoe against revolving air wrench until spike is threaded securely. Repeats operation until each spike in sole and heel is fastened to shoe. 2. Sets shoe right side up on padded anvil. Inserts stud in auger and revolves tool against sole of shoe until spike is completely threaded.

8568-218 SPORTS-EQUIPMENT FILLER(sport. & toy) DPT:687
 GED: 1 SVP: 2 EC: 1 PA: L 4

Stuffs sports equipment, such as baseball base markers, football dummies and medicine balls manually with excelsior or other filling material:

Fills bag, ball or hide, with excelsior, cotton, felt or animal hair. Places the filled object on bed of press and pulls lever to lower head that compresses stuffing to prescribed thickness. Inserts anchor straps through loops sewn on baseball base and football dummies.

8568-219 STEAM-CABINET ATTENDANT(garment & fabric) DPT:687
 GED: 1 SVP: 2 EC: 1 3 4 PA: L 4

Places rolled pleat patterns in steam cabinet to set permanent pleating: Places rolled patterns or cylinders in upright position in steam cabinet for specified period of time. Turns knobs to set temperature and humidity in steam cabinet, according to specifications. Turns valve to admit steam into cabinet. Removes steamed patterns and places them on rack to cool.

8568-222 STUFFER(misc. prod. fab., n.e.c.) DPT:687
filler.
 GED: 1 SVP: 2 EC: 1 7 PA: L 4

Fills pillows, cushions, comforters, sleeping bags, athletic equipment, or insulated clothing with down, feathers, or other filler, using fanning machine:

Weights out specified quantity of filling material on scale, and distributes filler into smaller containers. Inserts blower hose of fanning machine into article or segment of article to be filled and places suction hose into filler container. Depresses foot pedal to start machine which blows filler into cover.

May stuff pillows or cushions by hand. May close open end of cushion cover, using sewing machine.

8568-226 THREAD TRIMMER, MACHINE(any ind.) DPT:687
 thread cleaner; thread cutter.
 GED: 1 SVP: 2 EC: 1 PA: L 4

Trims loose threads from edges or seams of articles, such as knitted garments, draperies, dresses and handbags, using either of the following methods:

1. Moves edges or seams over stationary cutting head equipped with vacuum attachment that draws threads between reciprocal blades to cut threads. 2. Spreads article on table or pulls article over form and guides electric hand clippers equipped with vacuum hose along edges or seams of article to cut threads. Pulls loose threads through several stitches with latch needle or ties threads from converging seams to secure stitching, when trimming knitted garments.

May cut short or thick threads unsuitable for machine cutting, using scissors.

8568-230 TRIMMER, HAND(any ind.) DPT:687
 clipper.
 GED: 1 SVP: 2 EC: 1 PA: S 4 7

Trims ravellings, loose thread or excess material from articles such as, garments, hosiery, textile products, embroidered articles, handbags, or shoe parts:

Breaks, cuts, and trims excess material or loose threads from completed garments or garment parts, using scissors. Pulls through basting or loose ends of stitching threads from outside to inside of knitted garments and socks, using hook or bodkin and knots thread, and cuts off loose ends with scissors.

May scan trimmed articles for soiled spots and stitching or dyeing defects. May carry bundle of trimmed articles to next department for further processing. May be designated according to particular task assigned; for example,

Basting Puller(garment & fabric; knit goods)

Embroidery Trimmer

Puller-Through(knit goods)

8568-234 TURNER(any ind.) DPT:687
 GED: 1 SVP: 2 EC: 1 PA: L 4

Turns garments, assembled textiles or leather articles right-side out, using turning devices:

Pulls article over lower rod of holding device and folds up lower end of article. Depresses pedal that closes jaws of holding device and pulls article right-side out. Releases pedal and removes article from rod. Piles turned articles on handtruck or table, for further processing.

May reverse article by hand. May clip thread between chain-sewn articles, using scissors. May be designated according to type of article reversed; for example,

Bag Turner

Footwear Turner(knit goods)

Garment Turner(garment & fabric; knit goods)

8568-238 HAT-SWEATBAND FLANGER(garment & fabric) DPT:686
 sweatband flanger; sweatband roller.
 GED: 1 SVP: 1 EC: 1 PA: L 4

Feeds hat sweatbands into flanging machine that curls sweatband to fit contour of hat:

Depresses pedal to start machine. Feeds sweatband between rollers and against guide on machine roller that curls sweatband. Repeats operation until sweatband is completely curled to shape.

May be designated according to type of sweatband material flanged; for example,

Leather Flanger

8568-242 LABOURER, PADDING(textile) DPT:686
 GED: 1 SVP: 1 EC: 1 PA: M 4

Performs any combination of the following duties in the production of padding:

Carries or trucks rolls of batting, gauze and reels of thread to machine. Lifts and positions rolls of batting and gauze on feed holder of padding machine. Laps gauze over padding at start of run. Pushes button to activate automatic shear on machine that cuts finished padding into specified lengths.

May perform other elemental duties during set-up of machine.

8568-246 BALE OPENER(textile) DPT:687
 GED: 1 SVP: 1 EC: 1 5 7 PA: H 3 4

Opens bales of textiles, such as cotton and jute:

Loads bales on handtruck, using hook, and transports them to work area. Cuts steel bands, using wire cutters, and removes bale cover. Cuts strings around individual bolts, using knife. Stacks bolts on dolly and pulls out ends of material in individual bolts to prepare them for joining into continuous strips. Removes bale cover, steel bands and strings for salvage, and to maintain cleanliness of work area.

May join cloth in continuous strip, using sewing machine.

8568-250 DRAW-STRING INSERTER(knit goods) DPT:687
 drawcord threader; ribbon inserter; taper.
 GED: 1 SVP: 1 EC: 1 PA: S 4

Threads ribbon, tape or elastic, through neck or waist bands of garments:

Lays garment on pile so that opening in band is readily accessible. Measures and cuts strips of threading material to required length, using yardstick and scissors. Threads bodkin with ribbon, tape or elastic. Inserts bodkin into opening in band and draws bodkin through tubing attached to garment.

May tie ends of threaded tape into bow. May repair minor defects in garment, by hand or using sewing machine.

8568-254 GARMENT RIPPER(garment & fabric) DPT:687
 GED: 1 SVP: 1 EC: 1 5 PA: S 4

Rips open seams of garments to be altered or repaired and removes loose threads from garments:

Cuts or rips stitches from sections of garment to be altered, following chalk marks, using razor blade, scissors or seam ripper. Pulls out loose threads by hand.

May trim ends of threads from finished garments by hand, or using scissors. May remove damaged parts of new garments, pin replacement parts to article, and be designated accordingly,

Match-Up Girl

8568-258 HANDLE MOUNTER(leather goods) DPT:687
 handle riveter.
 GED: 1 SVP: 1 EC: 1 PA: S 4

Attaches handles or shoulder straps to ladies' handbags by either of the following methods:

1. Inserts opened rings into handbag frame. Slips handle ends into rings and closes rings with pliers. 2. Positions opened rings into handbag loops, manually. Inserts rod in holes in rings and places rings under ram of powered press. Depresses pedal to activate ram and rivet end of rod.

8568-262 LINING INSERTER, SKATES(shoes) DPT:687
 GED: 1 SVP: 1 EC: 1 PA: L 4

Inserts padded leather lining into skate boots:

Spreads glue in boot on rack, using brush. Inserts and presses lining evenly inside boot to ensure adherence of lining to boot.

8568-266 PADDING CUTTER(furn.) DPT:687
 GED: 1 SVP: 1 EC: 1 PA: L 4

Tears or cuts cushioning materials to specified size or shape to be used as padding for upholstered furniture:

Unrolls bale of cotton or other padding material and measures specified length using tape measure. Tears or cuts padding or places form over it and cuts around form, using shears. Cuts edging to required length.

8568-299 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, TEXTILE, FUR AND LEATHER PRODUCTS

This group includes textile, fur and leather products labourers and other elemental workers, not elsewhere classified; for example, those

who bend flare of shoe parts, turn down cuffs of hose, form tassels on ends of shoelaces, sort belts according to size and style, assemble blackboard erasers, knot hairnet ends and cut them to size, stretch rugs, remove protective covers from shoes, and insert and trim mattress springs. Typical examples of occupational titles covered by this residual group definition are:

Blackboard-Eraser Maker(textile)
Finishing Trimmer(shoes)
Flare Breaker(shoes)
Rug Stretcher(textile)
Spring Inserter(furn.)
Tasseler(textile)

**8569-FABRICATING, ASSEMBLING AND REPAIRING
OCCUPATIONS: TEXTILE, FUR AND LEATHER
PRODUCTS, N.E.C.**

This unit group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing products made of fur, leather, textile, and similar materials; such as, canvas goods, harness and luggage, drapery, nets, parachutes and knit goods. Activities include: cutting, bevelling, folding, shaping, joining by gluing, bonding or cementing, attaching findings, crocheting, embroidering, pleating, covering, coating, spraying, and operating and tending machines.

8569-110 CANVAS WORKER(garment & fabric) DPT:381
GED: 3 SVP: 7 EC: B PA: H 2 3 4 7

Lays out, cuts and assembles canvas or similar materials into products, such as awnings, sails, tents and tarpaulins:

Lays out full scale drawings on floor, according to blueprints or sketches. Cuts pattern from paper, according to full scale drawing. Marks outline of material with crayon. Cuts material with shears or power cutter. Sews sections of material together, using sewing machine. Measures and marks off grommets holes on material. Punches holes, using mallet, punch and hardwood block or anvil. Attaches grommets, metal fitting and fasteners to product by machine or hand sews grommets. Sews galvanized iron ring to edge of hole in sailcloth, using sailmaker's palm and sail twine. Splices inserts and hems manila or wire rope in edges of material to relieve strain. Secures ropes or cables to finished article, using hand tools. Wraps and sews parts of rope or wire that are subject to chafing.

May stencil company title on article, using stencil and ink brush. May be designated according to product, or duties performed; for example, Rigger

Tarpaulin Maker

8569-114 RUG REPAIRMAN(textile) DPT:381
GED: 4 SVP: 6 EC: I PA: M 4 7

Repairs carpets and rugs by reweaving damaged areas, conforming to colour, pattern and weave of carpet or rug:

Tacks damaged area of rug or carpet onto table or frame. Trims and removes tuft yarns and backing twine of damaged area, using scissors, knife or razor blade. Inserts needle and twine into edge of damaged area, draws twine across area and into opposite edge and interlaces twine to form rug backing. Selects tuft yarn, to match colour, pattern and yarn of rug or carpet. Weaves yarn, into backing twine, using needle and following pattern and weave of piece being repaired, to form rug pile. Trims loose thread ends, using scissors.

May cut patch from defective rug or carpet, or from rug of similar model, and stitch its edges to edges of rug being repaired, using needle and thread. May remodel rug by cutting to required size and shape, using hand shears, and sewing edges, using needle and thread. May specialize in reweaving particular types of rugs and be designated accordingly; for example, Oriental-Rug Repairman

8569-118 HARNESS MAKER(leather goods) DPT:681
GED: 3 SVP: 6 EC: I PA: M 4

Cuts, assembles, and joins leather and other materials, to fabricate or repair harnesses:

Traces outline of harness part on material such as, leather or canvas, using pattern and tracing instrument. Cuts out parts, using knife. Assembles and sews edges of parts, using needle and thread, or stitching machine. Inserts harness strap ends through buckles, rings, or other hardware, and loops and joins end to body of strap, using stitching machine or hand riveting tool. Punches buckle holes in harness, using awl or punch. Applies paint and liquid dressing to harness to produce glossy finish, using brush or sponge. Repairs harnesses by replacing damaged or worn parts, such as bridle, rein and collar.

May repair saddles by replacing damaged or worn parts, such as cushioned seat, girth and cinches.

8569-122 INSOLE-TAPE MAKER(shoes) DPT:682
insole-tape-machine operator.
GED: 3 SVP: 6 EC: I PA: M 4 7

Operates machine that combines and glues in continuous operation, canvas-duck tape to leatherette tape, to produce insole tape used to make shoes:

Installs roll of gummed canvas duck tape and roll of leatherette tape on unwinding spindles of insole tape machine and closes catch to hold rolls in place. Threads unwinding ends of material carefully through roller guides, heating and combining devices and inserts the combined end of insole tape into slot of take-up spool. Depresses button to start machine and observes its operation to detect malfunctioning. Inspects and measures regularly insole tape strip, using small ruler to verify that close tolerance standards be met. Stops machine if measurements or quality of product is sub-standard. Adjusts roller guides and combining device, using wrench and screwdriver, and re-threads machine. Cleans machine regularly to prevent accumulation of foreign matter, using knife, air hose and brushes.

8569-126 LAMP-SHADE SEWER(misc. prod. fab., n.e.c.) DPT:684
GED: 3 SVP: 6 EC: I PA: S 4 7

Fabricates lamp-shades from material, such as silk, following patterns, and using shears, needle, thread and sewing machine:

Places specified material on table and marks cutting lines on material, following pattern. Cuts shade sections from material, using scissors or power cutter. Sews sections together to form shade covering, using single needle sewing machine. Draws shade covering over frame and bastes covering to tape on rings. Sews material to frame and trims material with scissors. Sews trimming around top and bottom of shade.

May wind tape around upper and lower rings of shade frame before drawing shade covering over frame. May sew wire to edge of shade to reinforce edge and retain shape. May sew elastic band around polyethylene tubing to make protectors for complete shade.

8569-130 LUGGAGE REPAIRMAN(leather goods) DPT:681
GED: 3 SVP: 5 EC: I PA: M 4

Repairs and renovates worn or damaged luggage made of leather, fibre or other materials, such as satin, nylon, and acetate:

Sews rips by hand or machine, inserts or repairs linings. Cuts and bends fibreboard pieces, using knives, scissors, and pliers. Glues frame together and rivets on locks, catches, corner protections and other metal parts.

May fabricate leather or fibre articles, such as briefcases, sample cases and instrument cases, according to customers' specifications. May specialize in repairing trunks and other heavy luggage and be designated accordingly.

8569-134 ORTHOPEDIC-APPAREL ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:681
GED: 3 SVP: 5 EC: I PA: L 4 7

Fabricates and assembles supports and orthopedic devices, such as cuffs, braces, straps, corsets, and half-limbs:

Positions patterns on fabric, leather, or over plaster cast to obtain optimum use of material, and traces outline with pen, pencil, or awl on cutting area. Cuts material, using scissors or knife, and punches holes

for laces, using hand or power punch. Rivets metal eyelets in holes, using riveting machine. Assembles leather parts, and stitches stay holders, elastic inserts, and fabric pieces by hand or machine. Attaches leather to parts of artificial limbs. Sews pieces over rubber or foam shock absorbers, using needle and thread.

May take body and limb measurements of patient being fitted for orthopedic device. May fabricate and assemble orthopedic parts made from metal. May be designated according to device assembled; for example, Artificial-Limb Assembler

8569-138 REPAIR WEAVER(garment & fabric; textile) DPT:681
art weaver; mender; weaver, hand.
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Repairs holes or small defects in apparel or fabrics, applying hand weaving technique (invisible mending): Pins garment to padded block. Reweaves defective area by either of the following methods: 1. Threads needle with yarn and stitches material at edge of damaged area, interlaces it over and under perpendicular strands, across hole and into fabric on opposite side. Pulls needle until both yarn ends protrude from fabric. Replaces each missing yarn running parallel to first. Subsequently weaves in same manner perpendicular strands to reproduce exact replica of original pattern. Uses needle and fingers to pull projecting yarn ends to reverse side of material, to leave a neat and invisible mend. 2. Cuts patch of similar material, to approximate dimension of damaged area. Ravel yarn from edges of hole and patch, leaving frayed appearance. Pins or bastes patch under hole so that pattern matches. Weaves yarn protruding from patch into article, and yarns protruding from article into patch, using sewing needle, latch needle and fingers. May cut patch or pull required number of cross and length yarns from hidden parts of garment such as seam or hem allowance, for use as repair material. May pull out coarse and surplus yarns or remove slack by pulling on loosely woven yarns, using tweezers and needle. May remove weaving defects, such as burs or slubs.

8569-142 BEAD WORKER(shoes, leather goods) DPT:684
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Sews beads and other ornaments to leather articles, such as belts, purses, and moccasins, to form Indian-type decorative designs: Stitches beads individually or in clumps onto leather articles, using needle and thread, following designs drawn on paper or own creation. Prepares deerskin or other hide for beading by rubbing hide with stones or kneading with hands to soften leather. Stitches other ornaments, such as bird claws, feathers, and animal teeth, to leather to form contrasting design. Prepares thread from leather sinews for attaching ornaments.

8569-146 SEAMSTRESS, LINEN ROOM(cater. & lodg.; laund., clean. & press.) DPT:684
GED: 3 SVP: 5 EC: 1 5 PA: M 4 7

Alters and repairs articles of clothing and linen, performing various hand-and-machine-sewing tasks: Bastes or pins and sews fabric parts together by hand or machine. Repairs fabric articles, replaces fabric parts, and makes alterations, such as patching or darning tears and holes, replacing worn collars, pockets and metal closures, lengthening or shortening garments. Mends, hems and repairs articles, such as bed and table linen, towels and uniforms, and inserts patches to cover large holes or tears. Sews binding ribbon to edges of blankets, and fringe, tassels and ruffles onto drapes and curtains. Replaces lost or broken buttons on shirts and uniforms. Replaces thread, fills bobbins and replaces broken needles as required.

8569-150 DRAPERY-HEADING MAKER(garment & fabric; ret. trade) DPT:684
drapery header.
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Measures, trims, presses, pleats and sews fabric sections to form drapery headings: Positions drapery section on layout table to straighten fabric. Fastens section to table to facilitate measuring and trimming, using sizing device, clamps and pins. Measures section according to specifications, using measuring tape. Cuts uneven edges and trims surplus material

from section, using shears. Folds top of section over crinoline and presses to form heading, using steam iron and pressing cloth. Pleats material, using one of the following methods: 1. Lays cardboard pleat pattern over heading and marks pleat positions on material, using marking pencil or powdered chalk. Sews heading at marked positions to form pleats, using sewing machine. Tacks hook in specified place on heading to hang drape, using thread and needle. 2. Turns control knobs of automatic pleating machine to adjust for specified pleat size. Starts machine and inserts drapery heading into mouth of machine. Guides drape through machine to keep fabric straight as pleat is made automatically, according to specifications.

May sew drapery panels together according to specifications to form complete drape, using sewing machine. May hem drapes, using sewing machine or thread and needle.

8569-154 FINISHER, HAND(garment & fabric) DPT:684
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Fastens grommets, and hand sews reinforcing patches, ropes, rings and snaps to canvas products, such as awnings, tents, sleeping bags and tarpaulins:

Sews reinforcing patches, ropes, snaps and other fittings to specified areas of canvas, using thread, palm, and needle. Measures and draws grommet holes on canvas with ruler and pencil. Cuts holes and fastens grommet to canvas, using hammer, punch, and wooden block, or operates machine to fasten grommets to canvas. Splices rope to metal fittings, binds ends and sews to canvas. Threads ropes through grommets or ties to canvas, or splices to tarpaulin. Repairs defective canvas by patching or replacing ropes or grommets.

May taper rope by shaving it with knife, and sew rope to canvas. May be engaged in finishing a specific product and be designated accordingly; for example, Sleeping Bag Finisher Tarpaulin Finisher Tent Finisher

8569-158 LEATHER WORKER(leather goods) DPT:684
GED: 3 SVP: 4 EC: 1 PA: L 4

Fabricates or repairs leather articles, such as holsters, rifle cases, slings, and billiard table pockets, using clicking, skiving and stitching machines:

Cuts leather to specified size and shape and bevels edges, using clicking and skiving machines. Fastens parts together, using rivets and stitching machine or adhesive. Attaches eyelets and metal decorations to article, using hammer and punch or arbor press.

May be designated according to article fabricated; for example, Rifle-Case Maker

8569-162 LUGGAGE-SHELL BONDER(leather goods) DPT:684
GED: 3 SVP: 4 EC: 1 PA: L 4 7

Bonds leather covering material to luggage shell, using vacuum-forming machine:

Prepares adhesive solution, by mixing specified amount of ingredients. Fills spray-gun with adhesive solution, and sprays exterior of plastic-luggage shells and covering material. Places open trays loaded with sprayed shells into oven for preheating. Removes preheated shells from oven and places shells into vacuum-forming- machine jig. Fastens piece of presprayed leather covering material to inside of lid of vacuum-forming machine, using sealing frame and clamps. Depresses button to lower machine lid against shell to heat and bond covering material to luggage shell and to create a vacuum on shell surface area being covered. Removes covered shell from jig and trims excess material from shell, using knife. Inspects finished product to verify adhesion of covering material to luggage shell.

8569-166 SKIVER, MACHINE(leather goods) DPT:684
GED: 3 SVP: 4 EC: 1 PA: S 4 7

Bevels edges of leather components for articles, such as handbags, briefcases, and belting, using skiving machine:

Turns skiving machine's setscrews adjusting gauge, guide, feed roller and blade, to regulate angle of bevel. Depresses foot pedal to start machine. Positions leather piece on bed of machine, against gauge and beneath guide. Guides leather piece over feed roller that forces edge of material against blade to skive edge for easier folding and better

joining. Turns button to move built-in emery wheel against blade to sharpen cutting edge, whenever necessary.
May manually pull leather pieces across fixed cutting edge to reduce thickness.

8569-167 CANVAS-COVER REPAIRMAN(any ind.) DPT:684
GED: 2 SVP: 4 EC: I PA: M 4 7

Repairs damaged or worn canvas parts, such as tents, awnings and filters:

Spreads canvas on work table and examines it for holes, tears and worn areas. Trims edges of damaged area, using scissors or knife. Patches holes, sews tears, or darns defective area, using needle and thread, or sewing machine. Stamps grommets into edges of canvas, using mallet and punch or eyelet machine.

May dismantle, clean, repair and re-assemble canvas filters used for removing impurities from slurry. May be designated according to article repaired; for example,
Awning-and-Tent Repairman(textile)

Filter Tailor

8569-170 CROCHETER, HAND(knit goods) DPT:684
GED: 2 SVP: 4 EC: I PA: S 4 7

Crochets decorations for custom-made garments, often as home worker:

Crochets edges, seams and decorative pieces for garments according to specifications, using crochet needles and yarn, making loops and knotting yarn to form pattern. Finishes garments by covering buckle frames, buttons and other trimmings with crochet work.

May crochet complete dresses or other garments. May form pattern of own design.

8569-174 EMBROIDERER, HAND(garment & fabric; knit goods) DPT:684
GED: 2 SVP: 4 EC: I PA: S 4 7

Embroiders decorative designs on garment parts or other materials by hand stitching, following stencilled or stamped pattern:

Fastens embroidery hoop or frame over fabric to keep fabric taut. Threads needle with type and colour of thread or yarn specified. Embroiders along stamped or stencilled design or according to diagram, utilizing knowledge of various stitches that may be required. May use strings of beads instead of coloured thread for ornamental work. May pin design on fabric before commencing embroidery. May specialize in one or more types of embroidery.

8569-178 BALL STITCHER, HAND(sport. & toy) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Sews leather covers on baseballs and softballs:

Places glue-dipped ball in vise, and stretches leather over ball. Pulls perforated edges of cover together, using pliers, and secures into place with staples. Sews cover onto ball with waxed nylon thread, using harness needle in each hand.

8569-182 CASE MAKER(leather goods) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Assembles articles made of leather or similar material, such as pocketbooks, briefcases, or wallet cases, prior to final sewing:

Trims uneven edges of parts, using scissors and knife. Folds edges of parts, such as cover or utility pockets, and tamps edges, using hammer, to crease material. Applies cement onto edges, using brush. Joins cemented parts of articles, preparatory to final sewing, by manually pressing parts together.

8569-186 FINDING ATTACHER(leather goods) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Attaches metal findings onto leather to decorate articles, such as belts, wallets, and handbags, by either of the following methods:

1. Positions template on precut leather article. Punches holes in leather, following markings on template, using hammer, and punch or die. Inserts findings, such as, buckles, locks and ornaments, into holes, and clinches findings, using hammer and prying tool or by applying pressure with fingers. 2. Brushes cement onto fittings, positions fittings manually on premarked leather article, and presses fittings to leather.

8569-190 GRIP WRAPPER(sport. & toy) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Wraps leather strips around articles, such as golf clubs, and tennis rackets to form grips on handles:

Positions workpiece in machine that rotates article. Brushes adhesive on area to be wrapped. Glues end of leather strip to starting position of grip. Starts machine, and feeds leather strip onto rotating work-piece to wrap handle area, taking care to align edges of strip against one another without overlap or open spaces. Chamfers excess leather at end of grip, using knife, and fastens down with tape sleeve. Presses wrapping with hand to smooth leather. Wraps material, such as crepe paper, electrician's tape or rubber sleeves, to build up handle area, and prepares list of materials used.

8569-194 HAND SEWER(any ind.) DPT:684
GED: 2 SVP: 3 EC: I PA: S 3 4 7

Sews parts, trimmings, fasteners or labels, to items, such as garments, curtains, lamp-shades, parachutes, stuffed toys and moccasins, using needle and thread:

Selects thread and needle according to specifications and colour of objects. Aligns parts, fasteners, labels or trimmings, following seams, edges or markings. Sews by hand, to join objects, with stitches, such as felling, tacking and basting. Trims excess thread and edges of parts, using scissors, knife or razor blade. Sews basting stitches on garment parts to mark position of vees and pleats to be sewn, and closes garment pleats, using criss-cross stitches to facilitate pressing.

May be engaged in a particular activity and be designated accordingly; for example,
Basting Marker

8569-198 KNIT GOODS MENDER(knit goods) DPT:684
GED: 2 SVP: 3 EC: I PA: S 4 7

Repairs defects, such as holes, runs and pulled threads in knit goods, by one or combination of following methods:

1. Sews up holes, using needle and thread. 2. Stretches damaged portion of garment and secures one end of broken thread, using needle and thread. Reknits dropped stitch or run, using latch-up needle. Bastes across other end of broken thread and clips loose ends, using snips or scissors. Pulls knots to reverse side of garment. 3. Stretches garment over mending cup and moves mending disk across garment to return picked or pulled thread to position.

May operate sewing machine to re sew defective seams. May use electric iron to straighten and smooth mend. May be designated according to product repaired; for example,

Garment Mender
Hosiery Mender
Sock Mender

8569-202 NET MAKER(misc. prod. fab., n.e.c.) DPT:684
stringer.

GED: 2 SVP: 3 EC: I PA: L 4 7

Makes nets, interlacing and knotting twine, by either of the following methods:

1. Selects gauge and twine according to specifications. Wraps twine around twine holder (needle) that facilitates interlacing and knotting of twine. Extends and ties ends of foundation line to poles. Ties twine to end of line with clove hitch and positions gauge against line. Loops twine around gauge and knots twine onto foundation line, forming half mesh. Removes gauge and repeats operation to form row of half meshes. Holds gauge against half-mesh, pulls twine around gauge, and ties sheep bend knot onto half-mesh, forming mesh. Repeats operation with succeeding half meshes to form net. Unties foundation line from net. 2. Fastens ends of two parallel meter lines or ropes to posts or hooks in wall so that meter lines are waist high from floor. Ties seaming twine or thread to end of meter line or rope and draws shuttle-type wooden needle through successive meshes of netting. Brings needle over and under rope at specified distances and makes half-hitch to fasten twine to rope. Fastens plastic floats at intervals along one meter line. Clinches lead weights to second meter line of gill net, using hand tools.

May repair nets or make a specific type of net and be designated accordingly; for example,

Fish-Net Maker
Net Repairman

8569-206 PARACHUTE STRINGER(garment & fabric) DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles, threads, and ties shroud lines of parachutes to connect canopy to parachute harness:

Punches holes in centers of panel seams for insertion of shroud lines, using pointed metal punch. Flattens end of shroud lines to facilitate threading of stringer needle, using mallet. Threads and ties shroud lines through eyelets in edge of parachute. Inserts shroud lines through holes in opposite seams, when shroud lines are continuous, so that line lies in semi-circle around top hem. Threads and pulls line down through panel seam, drawing it out just above reinforcements attached to bottom hem of canopy. Ties ends of shrouds through metal swivels or fittings for attachment to harness, or threads asbestos-suspension lines of flare parachute through metal swivels for attachment to flare.

8569-210 PASSEMENTERIE SEWER(misc. prod. fab., n.e.c.) DPT:684

GED: 2 SVP: 3 EC: 1 PA: S 4 7

Fashions and hand sews ornaments for dresses, coats or jackets, using braid, gimp, silk, cord, and other trimming materials:

Measures and cuts material into lengths, according to specifications, using ruler and scissors. Weaves or knots yarn or cord to make braid or fringe, and hand sews knots to prevent ravelling. Shapes and sews braid, gimp or other material with invisible stitches directly onto garment or over paper pattern to reproduce design. Removes paper pattern from completed article. Attaches fasteners and trimmings, such as tassels, braids, fringe, loops or beads, according to design. May make novelty buttons by knotting and intertwining strips of leather or gimp.

8569-214 PLEATER, HAND(garment & fabric) DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4 7

Forms and tapes pleats in cloth fabrics or unfinished garments, using pleat patterns and masking tape:

Places opened pleat pattern on table, using iron weights to hold pleats open. Lays fabric or unfinished garment such as skirt on pattern, and folds creases in pattern by hand to form pleats. Rolls pattern with fabric inside into cylinder preparatory to steaming, or tapes waistline of skirts with masking tape, to keep pleats in place.

May pin pleated skirts on hanger, attach customer's order slip on skirts, and place hanger on bar. May be designated according to article pleated; for example, Pleater, Skirts

8569-218 BAG-TURNING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685

GED: 2 SVP: 3 EC: 1 5 6 7 PA: M 3 4 7

Tends machine that turns textile bags right side out:

Unloads bags from hand truck and piles them on turning machine table. Adjusts machine to size of bag by turning crank that expands or contracts holding jaws and ram. Starts machine and slides open end of bag over jaws to allow ram to invert bag through open end. Loads inverted bags onto hand truck. Records number of bags turned, for production control purposes.

May be required to change ram of machine to handle bags of unusual size, using hand tools.

8569-222 FIBRE-STRAP-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685

GED: 2 SVP: 3 EC: 1 PA: L 4 7

Tends machine that twists, glues, compresses and dries multiple strands of synthetic fibre yarn to form rolls of strapping material used for packaging:

Hangs cones of yarn on creel and empty spool on winder. Turns valves to fill glue troughs. Opens steam valves and observes thermometer to heat glue and drying cans to specified temperature. Threads strands of twisted-fibre yarn through tension device, glue bath, compression dies, infra-red-tacking lamps, around drying can and through rollers and counter to spool. Starts machine and inspects finished strapping for strand separation, thickness and width. Cuts out faulty areas, using scissors, and splices ends together. Replaces empty cones and full

spools on machine. Repairs breaks in yarn by splicing ends. Tags and marks full spools for identification.

8569-226 ORNAMENT SETTER(leather goods) DPT:685

GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends machine that attaches nail-heads or other ornaments to clothing or articles made of leather, plastic or other material:

Selects dies, according to specifications, and secures them in ram and bed of machine, turning setscrews. Selects nail-heads or other ornaments according to specifications. Places self-fastening ornaments in die of ram or metal fastener in upper and lower dies of machine. Positions leather or plastic material onto base of template, pulls adjacent side of template down onto material, places template under machine ram, and depresses pedal to lower ram that clinches metal fasteners through holes in template to attach ornament.

8569-230 SHOELACE-TIPPING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685

GED: 2 SVP: 3 EC: 1 PA: L 3 4 7

Tends machine that wraps plastic tipping material around strands of braid at specified intervals to form shoelace tips, and cuts braid into laces:

Sets measuring device to cut laces of specified length, using hand tools and rule guide on machine. Threads end of braid through guides and carrier and around measuring device and feeder wheels, or ties end of braid to braid machine to avoid interruption of production. Places roll of plastic tipping material in holder and draws end through guides and feed roller of tipping mechanism. Starts machine that feeds braid through gluing, tipping and cutting mechanism, and drops laces onto racks. Removes laces from rack. Inspects and removes defective laces. Ties laces into bundles. Pours glue solution into container attached to machine. Records production data, such as type and size of shoelaces cut and tipped.

May tend machine that clamps metal tips on shoe laces. May tend semi-automatic-tipping machine and manually place each length of braid around measuring device, and depress foot pedal to wrap and seal tipping material around braid.

8569-234 LEATHER STOCKMAN(shoes) DPT:587

GED: 2 SVP: 3 EC: 1 PA: M 2 3 4

Gathers and examines hides, and schedules leather cutting operations for shoe production, according to standard procedures:

Gathers bundled hides from storage bins according to work ticket. Records quantity and length of hides from tag on bundle to keep inventory records up-to-date. Sorts work tickets according to number of shoes, stock number, type of hide, and shoe widths, to arrange daily production schedules. Inspects hides for quality, and returns sub-standard hides to tannery.

May receive and store hides for future use. May scrape labels from hides with knife, preparatory to cutting hide.

8569-238 WATERPROOFER, GARMENTS(garment & fabric) DPT:687

GED: 2 SVP: 3 EC: 1 4 PA: M 4 7

Applies waterproofing solutions to garments, such as aprons and rainwear and, to cloth by one of the following methods:

1. Immerses garment in tub to saturate with waterproofing solution. Removes excess solution, using hand-operated wringer. Hangs garments in dry-kiln. 2. Places garments on form. Applies solution with brush. Places forms on dolly racks and pushes dollies into dry-kiln. 3. Threads end of bolt of cloth around tensioning and scraping bars, through dipping trough, and manually wraps it around take-up reel.

8569-242 BASEBALL-GLOVE SHAPER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Shapes baseball gloves, using heated, hand-shaped forms, mallets and hammers:

Pulls glove over heated hand-shaped form to open and stretch finger linings. Pounds finger and palm of glove with rubber mallet and ball-shaped hammer to smooth seams and bulges and to form pocket. Removes gloves from form, inserts hand into glove, and strikes pocket

with fist to shape pocket properly. Examines glove visually and tactually to ensure conformity to standards.

8569-246 COVERER, LUGGAGE(leather goods) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Glues leather or vinyl covering or lining onto frame or interior of articles, such as luggage, briefcases and handbags:
Selects frame, covering material, lining, and cardboard strips according to specifications. Creases cardboard strips lengthwise to provide rigidity to complete assembly, using bending machine. Positions strip of covering material on feed rollers of glue-spreading machine, or lays material on table and applies glue, using brush. Places frame on glued strip and wraps covering around frame. Smooths material manually or uses moistened bone to avoid marking material. Cuts slits at corners and in material for clasps or other frame attachments, and removes excess material, using knife. Positions lining in interior of shell and presses with fingers to smooth lining onto shell.
May tape rivets in luggage frame holes to prepare for riveting.

8569-247 CRUSHER(garment & fabric) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Crushes cloth to form three-dimensional geometric patterns for fancy linings in caskets:
Selects shaping die and fabric according to specifications. Lays material over female crushing die, and fits male crushing die or crushing rod over material and into depression of female die, manually. Steams material on crushing board to set shape, using steam hose. Removes male die or crushing rod. Applies glue to backing material through screen with roller and presses backing material against screen, using brush. Lays backing material on raised portion of facing material on crushing board. Rubs cloth over backing material to stick fabrics together. Removes material from crushing board and hangs finished article to dry.
May tend crushing machine that lowers rotary crushing rod onto fabric.

8569-250 HANDBAG FRAMER(leather goods) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Attaches hinged metal frames to leather, fabric or plastic articles, such as handbags and billfolds:
Spreads grooves in frame, using automatic opening device or pliers. Clamps frame in frame-tightening device, and pushes edges and corners of bag into grooves with fingers and punch. Depresses pedal of tightening device to pinch sides of grooves around edges and corners of bag fabric.
May examine articles for defects and repair damaged frames, using hand tools.

8569-254 HARNESS RIGGER(garment & fabric) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Threads breast shields, buckles, snaps, and other hardware devices on straps of parachute harness to position them for stitching into place:
Clamps harness onto wooden jig with wire clamps. Slides canvas breast shield fitted with snap onto one harness strap and slides shield fitted with buckle ring onto other strap. Attaches pair of backstraps to harness and slides snap onto one strap and buckle ring onto other strap. Crosses backstraps and pulls them through buckles mounted on opposite harness straps.

8569-258 LUGGAGE-HANDLE MAKER(leather goods) DPT:684
handle coverer.
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Glues layers of kraft paper around metal or plastic form and covers it with leather or similar material to form handbag or luggage handle:
Glues wet strip of gummed kraft paper around form to provide shape and padding. Positions pre-cut leather or plastic covering around kraft paper covered form. Attaches covering to padding, using sewing machine, staples or glue. Dries finished handle in electric oven. Punches holes into extremities of handle and inserts supporting rings, using punch press.
May compress and shape finished bundle, using power press.

8569-262 NYLON-HOSE SLITTR(knit goods) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Operates machine equipped with electrically heated knife or with wire that cuts and fuses edges of nylon tubing to make hip part of panty hose:
Depresses button to heat knife or wire. Slides nylon tubing over hip-shaped form or places nylon tubing on top of machine bed having hip-shaped groove. Pulls down handle, or guides heated knife along groove, to slit leg opening and fuse edges to prevent ravelling. Removes panty hose from form or from machine bed, and stacks them aside, prior to joining legs.

8569-266 PARACHUTE FOLDER(garment & fabric) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Folds circular or rectangular parachutes preparatory to further processing or shipping:
Spreads circular parachute canopy on table, after shroud lines are attached, and straightens canopy and lines to eliminate wrinkles, tangles, or coils. Clamps shroud lines to table top with vise, and pulls lines taut. Ties and sews over ends of shroud lines. Folds canopy lengthwise on its seams, one panel over another. Rolls folded canopy from top to bottom, removes shroud lines from vise, wraps lines around rolled canopy, and slides bundle into plastic bag. Folds rectangular parachute canopy fanwise so that shroud lines are grouped together.

8569-267 UPHOLSTERY CLEANER AND FINISHER(furn.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 3 4

Cleans and adjusts upholstery on new furniture preparatory to storage or shipping:
Inspects spots to ascertain composition. Selects solvent and applies it to spot with cloth or brush. Cleans dust, lint, and cloth scraps from fabric, using air hose and vacuum cleaner. Applies steam to upholstery, from steam hose or iron, to raise nap, brighten colour and tighten fabric. Smooths upholstery into folds and pushes padding to corners of cushion and backs with pick. Rubs exposed wooden parts with furniture polish if required.
May attach advertising and brand-name tags in specified locations, using needle and thread.

8569-270 BUTTON-ATTACHING-MACHINE TENDER(garment & fabric) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that attaches buttons to articles of apparel, such as work clothing and shirts:
Places tack in holder on machine bed. Positions premarked article over tack on bed and positions button on garment over tack and under machine ram. Depresses pedal that lowers ram to join button to article.

8569-274 COLLAR AND BELT TURNER(garment & fabric) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that reverses partially finished collars and belts on garments, such as shirts and ladies' dresses, and flattens seams of collars:
Folds collar or belt back along seam and draws folded seam under upper jaw of machine. Depresses pedal that raises lower jaw of machine to spread seam. Grasps collar or belt and moves it back and forth under upper and over lower steam heated jaw to flatten seam. Releases pedal and removes article from machine.

8569-278 CREASING-MACHINE TENDER(garment & fabric) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that creases edges of garment parts, such as pockets and cuffs, to shape and prepare them for sewing by either of the following methods:
1. Positions part in heated die on bed of machine. Pushes buttons to start machine that automatically lowers upper die onto garment part and into lower die, releases steam from lower die, and moves horizontally - sliding plates over edges of part to fold and press part.

2. Inserts edges of garment part through folding device and guides folded edges between heated pressing rollers.
May be designated according to part of garment creased; for example, Cuff Creaser
Pocket Creaser

8569-282 CRIMPING-MACHINE TENDER(any ind.) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends machine that crimps fasteners, such as buttons, eyelets, grommets or snaps, to products made of textile, leather, or similar material:

Pours fasteners of specified type and colour into hopper on vibratory feeder of machine. Adjusts machine for proper spacing between fastener, placing peg in appropriate hole of machine. Pulls switch to start machine, and positions material on calibrated machine bed, according to markings on material. Depresses pedal to start mechanism that feeds fastener to machine head, lowers machine head to force fastener through material, crimps fastener edges into material and forwards material into position for insertion of next fastener.

May insert fasteners at irregular intervals and locate and mark positions of fasteners on material. May be designated according to type of fastener used, or article made; for example, Eyelet-Machine Tender

Machine Fastener, Gloves(garment & fabric)

Snap-Machine Tender

8569-286 DRAPERY PLEATER, MACHINE(garment & fabric) DPT:685

GED: 2 SVP: 2 EC: 2 PA: L 4 7

Tends machine that folds pleats into top of drapery panels, and staples folded pleats in position for sewing:

Inserts staples in machine. Positions drapery on bed of machine according to width of pleats and distance between each pleat. Starts machine that forces material between dies to form and staple pleats. Folds and stacks pre-pleated drapery ready for sewing.

8569-287 EMBOSSE, FOOTWEAR(shoes) DPT:685
embossing-machine operator.

GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that imprints trade name on shoe parts:

Pulls lever to adjust height and pressure of machine head according to thickness of leather, or other material to be embossed. Positions specified embossed plate in heated upper stamping beam of machine. Places spool of coloured embossing ribbon on machine spindle and draws it through guides, under stamping beam, and between feed rollers. Positions shoe part on machine bed. Depresses pedal that lowers stamping beam and embossed plate, pressing coloured ribbon against shoe part and imprinting data on part.

8569-290 EYELET-PUNCHING-MACHINE TENDER(furn.) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that automatically fastens fabric, padding, and scrim together with eyelets to form felted-border panels for mattresses:

Loads material, such as fabric, padding and scrim on machine reels, inserts ends between rollers, and drops metal eyelets into feed slots of machine. Starts machine, by depressing button, and threads end of boxing emerging from machine onto windup reel. Removes windup reel of boxing from machine when full for transport to sewing area.

8569-294 FOLDING-MACHINE TENDER(leather goods) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that folds edges of articles, such as handbag parts, billfolds, and wallets to strengthen and smooth edges:

Positions part, such as flap, body front and back, against machine guide and under presser foot. Depresses pedal to move part edge against folding bar of machine that forms folded edge.

May apply two-way tape between parts, moving knee-lever that brings two-way tape into position under presser foot of machine. May spray silicone over parts when folding patent leather or smooth finished plastic material, to prevent sticking to machine bed.

8569-298 GARMENT STEAMER(laund., clean. & press.) DPT:685

GED: 2 SVP: 2 EC: 1 3 4 PA: L 4 7

Tends machine that removes wrinkles from knitted garments, with steam and hot air:

Inserts garments on studs of machine, or positions and shapes them on steam table following graduated scale printed on steam table cover. Starts machine, by depressing foot pedal, that subjects garments to steam spray and hot air. Turns garment manually to steam opposite side. Removes steamed garments and stacks them on table.

8569-302 GAUZE-PAD-MACHINE TENDER(textile) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends machine that forms gauze covered pads used as surgical dressings:

Manually mounts rolls of cotton or non-woven fabric and gauze on machine spindle. Threads materials through feed rollers of machine. Depresses button to start machine that cuts gauze and absorbent cotton or non-woven fabric to specified size, and folds gauze around material in prescribed manner to form surgical pad. Observes operation of machine and examines ejected pads for size, folding of gauze, and defects in material. Places pads into bags or cartons, and seals cartons, using glue and brush.

May tend gauze-pad-machine that wraps pads in paper before ejection.

8569-306 HANDLE-AND-VENT-MACHINE TENDER(furn.) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that automatically punches holes, crimps grommets, inserts ventilators and attaches handles to mattress borders:

Fills feed hoppers of machine with grommets, ventilators and handles. Slides border into marked position under machine head. Pushes button to start machine that punches holes in borders, crimps grommets, inserts ventilators and attaches handles to mattress borders. Observes operation to detect machine malfunction.

May select and install control tape on machine equipped with automatic device to measure off distance between handles, and cut side panel to specified length. May tend machine that only attaches handles and be designated accordingly, Handle-Machine Tender

8569-307 LABEL-CUTTING-MACHINE TENDER(garment & fabric) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that cuts, folds cut-edges, presses, counts and packs woven labels:

Positions roll of labels on feeding holder and inserts end in machine feeder mechanism. Turns handle to set level of offbearing holder and turns dial to set counter that stops machine when specified number of labels have been processed. Presses lever to start machine and observes labels to detect defective cutting, folding or pressing. Stops machine and turns handle to disengage cutting mechanism. Removes defective labels and notifies machine fixer to adjust machine. Removes labels from offbearing holder and packs them in boxes.

8569-310 LEATHER-BELT MAKER(leather goods) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machines that cut, punch, rivet, or staple parts to leather to make belts:

Positions leather manually against guides in stapling or riveting machine or punch press. Depresses pedal to punch buckle or tongue holes in belt, shear and shape belt ends, or attach snap fasteners to join parts.

8569-314 MANGLER(garment & fabric) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine consisting of pressing roll and ironing shoe, that shapes and smooths knitted garments:

Presses control lever to revolve roll and to engage ironing shoe with revolving roll while machine is heating. Adjusts rheostat, turning dial to heat ironing shoe and maintain specified temperature. Disengages

heating ironing shoe from roll, and stops roll. Spreads garments evenly on roll. Starts roll and re-engages ironing shoes to press garment.

8569-318 PERMANENT-PRESS SPRAYER, MACHINE(garment & fabric) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that sprays chemical solution on pressed pants to impart permanent creases:

Places pants to be sprayed on screen table of spray booth and smooths fabric evenly to ensure complete spraying. Presses button to start machine that sprays chemical solution to give pressed pants permanent creases. Flips pants over and repeats operation. Stacks sprayed pants on handtruck and pushes them to pressing area. Fills tank with chemical solution.

May trim excess material or loose thread from pants, using scissors.

8569-322 PLEATING-MACHINE TENDER(garment & fabric) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends one or more machines that fold and press pleats into cloth: Turns controls to adjust pleating knife according to specified width of, and distance between pleats, and to set temperature of pressing rollers. Manually mounts rolls of paper on rod at entry end of machine. Hand-feeds machine when pleating small articles, such as scarves and tie knots. Places roll of material at feed end of machine and draws fabric between layers of paper, through guides, under pleating knife, between heated-pressing rollers, and around take-up roll. Starts machine and observes pleating operation. Places rolls of pleated material in steam cabinet to set pleating.

8569-326 ROLLER-MACHINE TENDER(leather tan. & fur dress.) DPT:685
GED: 2 SVP: 2 EC: I 4 PA: M 3 4 7

Tends roller machine that stretches, smooths, or accentuates natural leather grain:

Positions leather on bed of machine and depresses pedal to lower roller onto leather. Starts machine to move roller over leather. Shifts position of leather to impart specified finish to entire surface. Pulls leather from machine table and stacks it on cart.

May be designated according to condition of leather rolled; for example, Dry Roller
Wet Roller

8569-327 SLITTER TENDER, KNIT TUBING(knit goods) DPT:685
GED: 2 SVP: 2 EC: I 6 PA: M 3 4 7

Tends machine that slits knit tubing to open width:

Positions truck of knit tubing in front of machine. Tightens screws to fasten knife and side guides in precise position at center of tubing. Places tubing in position between side guides. Starts machine by pressing button and guides fabric over knife, using both hands. Wraps cut fabric around take up roll to open width. Removes and sharpens slitting knife as required, using grind stone and hand tools.

8569-330 SPREADER, MACHINE(garment & fabric; knit goods; textile) DPT:685
cloth layer; layer up.
GED: 2 SVP: 2 EC: I PA: M 4 7

Tends machine that spreads cloth in successive layers on table to facilitate pattern marking and cutting:

Places marked ply of cloth on cutting table and positions metal stops on track according to length of ply desired. Positions bolt of cloth on carriage of machine and turns handle to align edge of cloth with marks on table. Threads cloth end through feed rollers and turns handwheel to adjust feed rollers according to gauge of cloth. Starts machine that automatically spreads cloth in even layers as it moves back and forth over table, or pushes machine along track over table. Laps head of cloth at points marked on edge of table. Inspects cloth as it is spread to detect defects, such as dye shadings and holes. Straightens edges and smooths layers of cloth manually. Cuts out

defects, using hand shears. Cuts cloth from roll, using hand shears or electric knife.

May mark pattern outlines on top ply of cloth. May cut spread cloth following outlines and be designated accordingly, Spreader and Cutter(garment & fabric)

8569-334 THREAD-CUTTER TENDER(textile) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that cuts and removes threads which connect designs on machine-embroidered fabrics:

Stitches length of embroidered fabric to lead cloth, using portable sewing machine. Adjusts clearances, starts thread-cutting machine, and guides fabric in machine to break threads. Turns fabric over to repeat operation. Rips seam to separate embroidery from lead cloth, pulling out thread with fingers. Cleans and oils machine, using hand tools.

8569-338 SOCK BOARDER(knit goods) DPT:686
GED: 2 SVP: 2 EC: I 3 PA: M 4 7

Feeds boarding equipment that shapes and dries knitted socks:

Adjusts steam pressure, turning valves, to heat metal forms used in shaping and drying socks. Pulls socks over leg-shaped boarding form, aligns toe and heel with form, and smooths out wrinkles in leg. Removes boarded socks from forms and stacks them for further processing. Changes toe tips on drying boards, using screwdriver, to shape socks to required sizes. Cleans and lubricates machines periodically.

8569-342 DRAPERY PLEATER, HAND(garment & fabric) DPT:687
pre-pleater, hand.
GED: 2 SVP: 2 EC: I PA: L 4 7

Pre-pleats and clips custom made draperies:

Determines number of pleats required, according to width of finished drapery and customer's requirements. Forms evenly spaced pleats across drapery, either by placing fabric over slotted device and by pressing it into slots, at pleat's location, with flat metal bar, or by using flat hooks to fold fabric as required. Clips fabric with clothes pins to hold pleats ready for sewing and removes bar or hooks.

May turn up hem and stitch edge, using sewing machine, giving desired length to drapery.

8569-346 GARMENT-PARTS SORTER(garment & fabric; knit goods) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4 7

Sorts, assembles into bundles, and tags specified numbers of garment parts for distribution to production workers:

Selects parts required to make complete garment according to size, style, colour, and number required. Ties garment parts into bundles and attaches work ticket to bundles to indicate production operation. Places bundles in bags, bin compartments, or on table for distribution to production workers.

May mark garment parts to indicate points of assembly or opening to be cut, using chalk or fluorescent marking pen, or by cutting notches, using scissors. May replace defective parts found while assembling bundles.

8569-350 BELT LINER(leather goods) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4 7

Glues linings to belts, and presses them together, using mangle:

Lays belt tops in straight rows over wax covered frames to avoid staining. Applies coat of paste to belt backs and linings, using brush. Aligns and presses belt tops and linings by hand and runs them through mangle to smooth and press them together. Places assembled belts into box.

8569-351 EMBROIDERY-MACHINE CHANGER(garment & fabric; textile) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Helps in operation of embroidery machine, performing any combination of the following duties:

Carries frames to and from embroidery machine. Installs and removes frames from machines. Inserts and threads prewound bobbins into empty shuttles, by hand. Places shuttles into slot of shuttle rail to maintain embroidery operation. Inserts cloth and backing in machine, manually. Regulates thread tension by turning wheel. Adjusts, or replaces shuttle when thread is broken or bobbin empty. Assists in changing or setting material in machine. Keeps shuttles clean and oiled. Removes embroidery pieces from forms, and bundles them according to size. See also definition for term title, 02-160 HELPER (any ind.).

8569-354 FLOCKER(misc. prod. fab., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Cements flock onto fabric articles, such as banners, crests and emblems, to give them velvety or woolly appearance:

Brushes sizing or coloured enamel onto article to stiffen article and to hold flock. Spreads flock by hand over sized material, and places article on tray. Presses button to start vibrating rollers on machine. Positions and holds tray on vibrating rollers that fluff flock over article, to produce velvety or woolly appearance. Cleans and dusts trays, when changing shades of flock, to prevent mixing of colours.

8569-358 FLOOR WORKER, PARACHUTES(garment & fabric) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4

Prepares parachutes for assembly and sewing, by performing one or more of the following duties:

Folds edges of parachute canopy over pre-cut tape, and inserts pins at seams to secure assembly in place for stitching. Lays out precut panels on table and marks reference points for sewing, using jig and pencil. Lays out canopy assembly parts, using jig, and secures components together, using heat-tacker to prepare sewing. Folds rectangular signal-flare parachutes in four, and marks corner representing center of parachute, prior to stitching.

May be designated according to function performed; for example, Parachute Marker
Vent-Tape Pinner

8569-399 OTHER FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS: TEXTILE, FUR AND LEATHER PRODUCTS

This group includes textile, fur and leather workers, not elsewhere classified; for example, those who hand-finish knitted gloves, tend synchronized machines, which produce sanitary napkins or tampons, and tend machines that fuse decorative emblems onto garments. Typical examples of occupational titles covered by this residual group definition are:

Band-Label Machine Operator(textile)
Emblem-Fuser Operator(knit goods)
Sanitary-Napkin-Machine Tender(pharm. & toil.)
Tipper(knit goods)

857-FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

This minor group includes occupations concerned with fabricating, assembling and repairing a variety of products made from rubber, plastics, and related materials; such as, tires, tubes, belts, gloves, tanks, fibreglass boat hulls and rubber footwear. These occupations are classified in the following unit groups:

- 8570** Foremen: Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products
- 8571** Bonding and Cementing Occupations, Rubber Plastic and Related Products
- 8573** Moulding Occupations, Rubber Plastic and Related Products
- 8575** Cutting and Finishing Occupations, Rubber, Plastic and Related Products
- 8576** Inspecting, Testing, Grading and Sampling Occupations: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
- 8578** Occupations in Labouring and Other Elemental Work: Fabricating, Assembling and Repairing, Rubber, Plastic and Related Products
- 8579** Fabricating, Assembling and Repairing Occupations, Rubber, Plastic and Related Products, n.e.c.

8570-FOREMEN: FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

This unit group includes occupations, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in fabricating, assembling and repairing, rubber, plastic and related materials products.

May supervise workers engaged in the production of a particular type of belt and be designated accordingly; for example,
Foreman, Conveyor Belt
Foreman, Snowtrack
Foreman, V-Belt

8570-110 FOREMAN, BELT BUILDING(rubber) DPT:138

Supervises and co-ordinates activities of workers engaged in producing a variety of conveyor, transmission, traction and v-belts by building up layers of rubberized fabric and rubber on building drums or tables; by trimming, cutting or skiving, belts to shape or size; by curing belts in horizontal heaters, steam or hydraulic presses; by splicing to form continuous belting; and branding, packaging or crating belts for shipping, dependent upon type, size and style of finished product:

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8570-114 FOREMAN, HOSE BUILDING(rubber) DPT:138

Supervises and co-ordinates activities of workers engaged in production of a variety of domestic, automotive and industrial hose by extruding rubber to form tubing; by covering tubing with braided or knitted wire or cord; by building up layers of rubberized fabric and rubber on mandrels; by covering hose with lead sheath or wrapping hose with fabric for curing; and curing hose by placing in horizontal heaters, attaching couplings and filling hose with steam or sliding hose over steam filled forms; by cutting hose to length; by attaching fittings, couplings or expansion joints; and branding and packaging hose for shipping in forms dependent upon type, size and style of finished product.

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular method of hose fabrication and be designated accordingly; for example,

Foreman, Formed Hose
Foreman, Lead-Press-Cured Hose
Foreman, Wrap-Ply Hose

8570-118 FOREMAN, INSPECTING RUBBER, PLASTIC AND RELATED MATERIALS PRODUCTS(plastic prod.; rubber) DPT:138

Supervises and co-ordinates activities of workers engaged in quality control functions; such as, inspecting, testing, grading and sampling of in-process, finished and repaired rubber, plastic and related materials, parts or products; such as, tire tubes, hose, linoleum, matting, footwear, foam products, automotive parts and accessories, electrical goods and household ware, (Unit Group 8576): Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers concerned with a particular product and be designated accordingly; for example, Foreman, Electrical-Rubber Goods Testing(rubber) Foreman, Foam Products Inspection Foreman, Footwear Inspection Foreman, Hose Inspection and Testing(rubber) Foreman, Matting Inspection(rubber) Foreman, Retread-Tire Inspection(rubber)

8570-122 FOREMAN, PLASTIC PRODUCTS FABRICATING, ASSEMBLING AND REPAIRING(plastic prod.) DPT:138

Supervises and co-ordinates activities of workers engaged in laying out, cutting, sawing, cementing, assembling, grinding, reaming, milling, routing, drilling, tapping, trimming, repairing, sewing, heat sealing, painting, decorating, pressing, extruding, laminating, casting, moulding and finishing plastic items by hand or special machine to produce a variety of parts or finished products; such as, skylights, display signs, tile, automotive parts and accessories, phonograph records, foam cushions, water hose, toys, packaging materials and fibreglass boat hulls and parts: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a specific activity or the production of a particular product and be designated accordingly; for example, Foreman, Blow-Moulding Foreman, Compression Moulding Foreman, Extrusion Foreman, Fibreglass Plastics Foreman, Finishing Foreman, Injection Moulding Foreman, Plastic Shop Foreman, Plastic Toys Foreman, Preform Foreman, Record Press Foreman, Reinforced Plastics Foreman, Thermoforming

8570-126 FOREMAN, RUBBER PRODUCTS FABRICATING, ASSEMBLING AND REPAIRING(rubber) DPT:138

Supervises and co-ordinates activities of workers engaged in laying out, cutting, fitting, shaping, splicing, cementing, assembling, moulding, vulcanizing, curing, trimming, grinding, buffing, repairing, measuring, cleaning and finishing by hand or special machine, a variety of parts or finished products; such as, tubes, footwear, retreaded tires, rolls, mats, automotive and household ware: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in a specific activity or in the production of a particular product and be designated accordingly; for example, Foreman, Curing Foreman, Finishing Foreman, Roll Building Foreman, Rubber Footwear Foreman, Stock Preparation Foreman, Tire Retread Foreman, Tire Tubes

8570-130 FOREMAN, TIRE BUILDING(rubber) DPT:138

Supervises and co-ordinates activities of workers engaged in assembling rubberized fabric, tire beads, sidewall and tread stock in specified sequence on collapsible building drum to produce pneumatic tires; inspecting and repairing green tires; and lubricating green tires preparatory to curing: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). May supervise workers engaged in building a particular type of pneumatic tire and be designated accordingly; for example, Foreman, Automobile-Tire Builders Foreman, Bus-Tire Builders Foreman, Off-Highway-Tire Builders Foreman, Truck-Tire Builders

8570-134 FOREMAN, TIRE INSPECTION(rubber) DPT:138 foreman, tire finishing.

Supervises and co-ordinates activities of workers engaged in finishing and inspecting cured tires; by trimming excess rubber formed on tire in curing process; by buffing to remove specified width of black rubber overcoating to reveal white sidewall; by inspecting tires to detect defects, such as cracks, blisters or ply separations; by sorting tires according to type of defect and repairing them; by changing brands on repaired tires that do not meet first grade specifications; by determining static balance of tires; by testing tires on forced variation machine; and by cleaning and painting tire surface and applying protective coating on white sidewalls preparatory to shipping: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8570-138 FOREMAN, TIRE STOCK PREPARATION(rubber) DPT:138

Supervises and co-ordinates activities of workers engaged in preparing stock for use in pneumatic tire building by bias-cutting and splicing rubberized fabric to form plies; by forming and finishing tire beads; by assembling and wrapping bands; by cutting and weighing rubber sidewall and tread stock; and assembling chafer strips: Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

8570-199 OTHER FOREMEN, RUBBER, PLASTIC AND RELATED PRODUCTS

This group includes rubber, plastic and related products fabricating, assembling and repairing foremen, not elsewhere classified; for example, those who supervise and co-ordinate the activities of workers engaged in laying out, cutting, cementing, assembling, trimming, forming, moulding, casting, shaping, curing, repairing, finishing and cleaning a variety of parts or products; such as, display balloons, solid tires, gaskets, fuel tanks, display mannequins, rubber bands, rubber stamps, tank linings, samples and rubber gloves. Typical examples of occupational titles covered by this residual group definition are: Foreman, Dipped Goods(rubber) Foreman, Mannequin(plastic prod.) Foreman, Tank Lining(rubber; plastic prod.)

8571-BONDING AND CEMENTING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

This unit group includes occupations concerned with bonding and cementing rubber or plastic materials to produce a variety of parts or finished products, such as re-capped tires, belts and footwear. Activities include: fitting, shaping, cleaning, cementing and finishing articles by hand or special machines.

8571-110 BELT BUILDER(rubber) DPT:664 GED: 3 SVP: 5 EC: 1 7 PA: H 3 4 5

Builds up layers of rubberized fabric and gum to produce transmission and conveyor belts: Pulls fabric and gum plies, of specified width, from rolls on letoff rack onto building table. Brushes cement on plies and aligns edges with

previously laid plies. Cuts plies to length with scissors, and bonds plies together, using hand and special rollers. Builds up specified number of plies and trims irregular edges with scissors and knife. Splices plies to obtain specified lengths. Inserts end of finished belt between pressure rollers that bond plies and roll belt onto windup rack. Signals crane operator to lift and position rolls of stock and belting in work area. Measures finished belts with ruler and gauges for conformance to drawings.

8571-114 TIRE REPAIRER-VULCANIZER(rubber) DPT:684
GED: 2 SVP: 4 EC: 1 5 7 PA: H 3 4 7

Repairs breaks and holes in casings and treads of large motor vehicle tires:

Cuts and trims defective area of tire, using knife. Scrapes and cleans area, using electrically-powered wire brush and abrasive wheel. Coats defective area on inside of tire with rubber cement. Positions precut rubber repair patch over cemented area, and rolls it into rupture to ensure adhesion, using special hand roller. Covers rupture on outside of tire with tread rubber and works rubber into hole, using roller. Trims patch, using knife. Inserts mandrel inside tire. Clamps tire in tire mould of pre-heated vulcanizing machine, to vulcanize rubber and fuse patch with surrounding rubber. Regrooves repaired portion of tread, using electrically-heated grooving knife or abrasive wheel. May use air or steam bag and steam-heated mould to vulcanize tire.

8571-118 TIRE RETREADER(rubber) DPT:684
tire recapper.
GED: 3 SVP: 3 EC: 1 7 PA: H 4

Applies new rubber tread to buffed tire casings, and cures tread in bonding chamber:

Mounts buffed casing on spreader to ensure tread will lie flat. Selects roll of tread material according to width and pattern. Cuts tread length to suit tire circumference, using knife. Applies chemical bonding tape, or brushes rubber cement onto tire casing. Loads mounted casing onto mandrel and presses pedal to rotate casing. Feeds tread strip between rollers that press tread against casing to ensure close bonding. Joins butt ends of tread, using rubber cement or hand stapler. Mounts curing envelope over tire tread and attaches exhausting tube to valve. Installs and inflates tube inside casing to maintain tire shape. Hangs tire from rail in curing chamber, seals chamber door and adjusts vacuum and steam valves to cure tread. May set tire aside after tread bonding, to be cured in vulcanizing mould. May operate extruding machine to form rubber tread of desired dimensions.

8571-122 TIRE-RETREADING-MACHINE TENDER(rubber) DPT:685
GED: 3 SVP: 3 EC: 1 7 PA: H 4

Tends automatic machine that applies extruded strip of uncured rubber tread to buffed tire casing:

Selects data card according to job order specifications. Places card over control panel, and sets dials and gauges to correspond with diagrammatic settings on data card. Mounts tire on expanding drum. Pushes lever to expand drum to tire size and inflate tire. Turns switch to start mounted tire revolving. Presses button to start extruding machine, and feed uncured rubber ribbon into machine. Pulls end of extruded rubber strip from machine outlet, feeds through roller assembly and applies it to revolving tire. Observes operation and adjusts extruded rubber thickness as required. Cleans machine and equipment, using solvent.

8571-126 ROLL BUILDER(rubber) DPT:684
GED: 2 SVP: 3 EC: 1 7 PA: M 4

Builds up rubber plies on metal cores for use as printers' rolls: Positions metal core in building machine by hand or using hoist, and applies rubber cement with brush. Pulls ply of rubber from roll in rack onto worktable. Measures and cuts ply to specified length with scissors. Vacuums rubber ply to ensure removal of dust and lint. Starts machine to revolve core. Wraps specified number of plies around core and splices ends. Compresses rubber plies and removes wrinkles and trapped air, using automatic machine rollers and hand roller. Cuts roll to length with knife. Weighs roll to ensure that specified thickness of finished roll covering is attained. Wraps finished roll with strips of cloth preparatory to curing.

8571-130 RUBBER-FOOTWEAR ASSEMBLER(rubber) DPT:684

GED: 2 SVP: 3 EC: 1 PA: M 4 7

Assembles rubber footwear articles by performing any combination of the following duties:

Places last on conveyor jack. Wraps upper around last and presses back seam at heel to hold upper onto last. Joins seams; such as, back, toe, pocket and top, allowing specified margin. Presses and rolls seams with fingers to ensure complete union. Attaches parts to workpiece in designated location, and aligns them, using other parts or templates as guides, or according to markings stamped on parts. Swabs dry parts with benzine or naphtha to restore tackiness.

8571-134 SNOWTRACK BUILDER, RUBBER(rubber) DPT:684

traction-belt builder.

GED: 2 SVP: 3 EC: 1 7 PA: M 4

Builds snowtracks for winter recreation vehicles, by one of the following methods:

1. Adjusts drum-type building machine to specified diameter. Mounts building sleeve over drum of machine and clamps in place. Pulls ply stock from machine spool and aligns with edge of sleeve. Depresses pedal to rotate drum, and winds specified length of ply onto sleeve. Cuts ply stock from spool with knife and splices ends, using fingers. Brushes ply layers with solvent to ensure adhesion. Positions pre-cemented and pre-cut steel rods on ply layers at specified locations. Applies layer of gum stock to cover rods, and hand rolls gum stock and piles as drum revolves. Cures snowtrack in automatic hydraulic-curing-press. 2. Pulls fabric and gum rubber plies of specified width onto table rack from rolls on letoff rack, and aligns edges with previously laid plies. Cuts plies to length with scissors, and bonds plies together, using hand roller. Builds up specified number of plies, and trims irregular edges with scissors or knife. Inserts narrow protective strips between ply layers at each end of belt to facilitate splicing. Measures finished belt with ruler and gauges for conformance to drawings. Sprays wax on surface of belt to prevent rubber from sticking to mould. Pushes table rack into press that moulds and cures belt. Stacks cured belts on skids or pallets for removal to splicing area. 3. Places pre-cured moulded rubber and fabric belt in machine that slits belt length-wise into widths. Lays sections side by side on assembly table. Punches holes in belt widths at specified locations, using automatic punch press. Positions preformed metal tread bars and ice cleats laterally over holes punched in belt sections. Inserts rivets into holes for automatic riveting of rods to belt strips to form completed belt.

8571-138 V-BELT BUILDER(rubber) DPT:684
GED: 2 SVP: 3 EC: 1 7 PA: M 4

Builds up plies of rubber and filler to form V-belts:

Positions building drum of specified circumference on shaft of building lathe. Measures and cuts one or more plies of rubber from roll, using rule and scissors. Brushes cement on surface of rubber. Lays one or more plies around drum and splices ends, using hand rollers. Threads end of cemented belt cord from spool through lathe guide, and positions at edge of base rubber on drum. Sets gauge and starts drum revolving, by depressing pedal, to wind specified cords per inch around length of base rubber. Positions layer of filler rubber on cord and splices ends. Starts drum revolving and lowers pressure rollers to compress material on drum. Wipes soapstone on compressed material to prevent sticking. Positions notched cutting bar across front of drum. Starts drum revolving and presses cutting bar against material to cut belting to specified width and V-shape. Collapses drum and places cut V-belts on rack.

8571-142 BRAIDING-MACHINE TENDER(rubber) DPT:685
GED: 2 SVP: 3 EC: 1 5 7 PA: M 4

Tends machine that braids and cements fabric cord or wire around rubber hose for reinforcement:

Mounts specified spools of cord or wire in letoff rack. Changes pitch gears as required. Threads hose and cord or wire into braiding machine. Adjusts machine controls to maintain uniform tension on cord or wire stock. Starts flow of rubber cement and pushes button to start machine. Observes operation for defects, such as broken cords and loose braiding. Ties broken cords. Coils braided hose in box. May operate machines that knit yarn onto rubber hose, or weave yarn

and wire jacket around hose, and be designated accordingly; for example,
Knitting-Machine Tender
Loom Tender

8571-146 STRAP-FOLDING-MACHINE TENDER(rubber) DPT:485
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machines that fold uncured rubber strip or coated friction tape over parallel reinforcing cords, to form strap material to which buckles, eyelets, or snaps are attached for use on rubber footwear: Reads work order and calculates width, length, and quantity of stock to be made, and sets automatic counter on machine. Selects cord, strip or tape and folding attachment according to work order. Mounts spools of cord on machine spindles and roll of strip or tape on arbour. Secures folding attachment to machine bracket by turning thumb-screws or using screwdriver. Cuts end of strip or tape on bias, using scissors, and threads strip or tape and cord through folder and pressing rollers. Positions carton or wind-up reel at discharge end of machine. Starts machine that forms strap material and observes machine for malfunctions.

8571-150 AUTOMOTIVE-DOOR-PANELLING ASSEMBLER(plastic prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles automotive door panels, by either of the following methods:

1. Sprays adhesive onto one side of precut baseboards, using spray gun. Places material, such as vinyl or fabric, on board, and smooths out material by hand. Cuts excess material, using shears. Cleans excess adhesive from panel, using cloth and chemical solution, and places panel on conveyor leading to drying unit. Places dried panel in automatic machine that embosses design on panel. 2. Places baseboard and vinyl sheet in tray on table of dielectric press, and smooths out material by hand. Pushes tray under ram of press. Pushes buttons to lower ram and start dielectric action that bonds vinyl to baseboard and embosses design on panel. Removes panel from press at end of cycle.

May attach metal trim to panel, using hand tools. May cement risers (shaped blocks or strips) between baseboard and covering material to impart decorative shape to panels. May staple covering material to baseboard, using stapling gun. May assemble plastic or fabric-covered panelling for marine craft or aircraft and be designated accordingly; for example,

Assembler, Aircraft Panelling
Assembler, Marine-Craft Panelling

8571-154 BAND BUILDER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4 7

Cements together bands of ply stock for use in manufacturing tires: Positions rubberized fabric on drum and aligns with sides of drum. Depresses pedal to rotate drum, guiding ply onto drum to form band. Wipes wrinkles with benzol and smooths by hand. Splices ends of ply by pressing with fingers. Repeats operation, reversing angle of splice until specified number of plies are formed into band. Depresses pedal or pulls lever to move rollers against band and rotates drum to bond plies. Pushes pedal to collapse drum and pulls band from drum.

8571-158 BELT-BUILDER HELPER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 7 PA: H 3 4

Helps to build up layers of rubberized fabric and gum rubber, to produce transmission and conveyor belts, by performing any combination of the following duties:

Moves rolls of stock to belt-building area, using lift-truck or hand-truck. Positions stock rolls in letoff rack, using hoist. Pulls fabric and gum plies of specified width onto belt-building table from roll in letoff rack or calender. Brushes cement on each ply and helps align edge with previously laid ply. Compresses plies together, using rollers and special hand tool. Builds up specified number of plies and trims irregular edges with scissors or knife. Helps insert end of finished belt between pressure rollers that bond plies. Rolls finished belt onto power-windup rack. See also definition for term title, 02-160 HELPER (any ind.)

8571-162 CONVEYOR-BELT SPLICER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: H 4

Splices ends of belt lengths together, to form endless belts: Measures and cuts belt lengths to specified dimension, using knife. Measures and cuts consecutive stepoffs in plies, on each end of belt, using splicing jig and knife, to fit ends together evenly for splicing. Brushes cement on ends and presses ends together, using hand roller. Positions splice in sewing machine and sews splice to reinforce joint. Coats splice with cement and applies gum strip covering.

8571-166 RUBBER-AND-CANVAS-FOOTWEAR DIPPER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Dips last-mounted shoe or boot casings in liquid neoprene latex and coagulant, to build up coating on surface, and provide bonding agent for further assembly:

Mounts lasted casings, soles down, on screen of dip pan. Depresses pedal to lower screen and dip casings in latex for specified time. Places dipped casings on conveyor leading to drying oven. Examines coating for defects, such as bubbles, lumps or thin spots, denoting poor mixture. Replenishes latex in reservoir of dip tank as required.

May immerse latex dipped casings in separate coagulating tank to harden coating. May redip casings to eliminate defects.

8571-170 SPLICER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Splices bias-cut ply stock into continuous strip for use in tire building: Inspects plies and removes defective sections. Aligns and splices sections of ply stock, by overlapping ends and pressing together with fingers. Presses pedal of winding device to wind spliced plies on spool. Determines when spool is loaded, by counting plies or observing stop mark on spool. Guides ply onto spools by hand to prevent wrinkling.

8571-174 SPONGE-GASKET ASSEMBLER(rubber) DPT:684
gasket gluer.
GED: 2 SVP: 2 EC: 1 PA: L 4

Cements and joins end of precut sections of sponge rubber, to form individual gaskets:

Brushes rubber cement on bevelled or butt ends of sponge rubber sections. Joins cemented ends in specified sequence and lays seams flat on work bench. Presses seams to make firm bond, using hand roller or fingers. Examines completed gaskets for uneven overlapping or butting of seams, and throws rejects in scrap bin.

May tie completed gaskets in bundles of specified number and pack them in cases for shipping.

8571-178 TUBE SKIVER AND SPLICER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Bevels and splices ends of rubber tubes to form inner tubes for tires: Cuts bevel on ends of tube, using knife, or slips tube over form set at angle to power-driven rotary knife that automatically cuts bevel. Brushes rubber cement on each end of tube. Aligns ends of tube and rolls and presses ends together to form splice.

8571-182 WADING-BOOT-TOP ASSEMBLER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles and joins tops to boots to produce rubber wading boots, by performing any combination of the following duties:

Selects precut parts according to worksheet and lays them on workbench for cementing. Brushes rubber cement on edges to be joined, and assembles cemented parts in specified sequence to form completed top. Cements top to boot and places strip of gum rubber over joined seam. Rolls seam with hand roller to make firm bond. Attaches eyelets and snap buttons at designated points, using grommeting tool. Hangs completed wading boot on rack to allow cement to dry. Lays out and cuts parts, such as straps or reinforcement tabs from spare stock, using template and scissors.

8571-186 BAND-STOCK PREPARER(rubber) DPT:685
squeegee splicer.
 GED: 2 SVP: 2 EC: 1 PA: M 4

Tends section of bias-machine to roll uncured stock and gum strip onto ply stock used for bands in pneumatic-truck-tire construction: Lifts rolls of gum strip and uncured rubber onto letoff rods of machine, and threads stock through guide rollers. Lifts bias-cut stock from conveyor to apron of machine. Turns setscrews to adjust apron guide and provide even application of uncured rubber and gum on ply stock. Starts machine to apply material onto ply stock and to accumulate ply stock in festoon of machine for band builder.

8571-190 CEMENTER, MACHINE(rubber) DPT:685
gluing-machine operator.
 GED: 2 SVP: 2 EC: 1 7 PA: L 4 7

Tends machines to apply margin of rubber or latex cement to rubberized-fabric footwear parts, by one of the following methods: 1. Draws edge of workpiece between cement-coated, revolving rollers to apply even coating of cement. 2. Depresses pedal to bring rollers together on material as it is passed between rollers. 3. Holds top of skirtlike upper along bottom edge between rollers to apply cement for subsequent bonding of shoe bottom. 4. Holds sponge rubber insoles against revolving disk that applies cement. Turns setscrews to adjust distances between pickup, wiper and applicator rollers and blades, to regulate amount of cement deposited on workpiece. Places processed parts on conveyor belt or in books, frames or stacks for subsequent processing.

8571-194 GREEN-TIRE LUBRICATOR(rubber) DPT:685
 GED: 2 SVP: 2 EC: 1 PA: H 4 7

Tends machine that lubricates uncured tires to prevent them from sticking to mould and bladder during curing process: Examines uncured tires for defects. Lifts tire from conveyor and positions on lubricating machine that sprays soapstone solution on inside and outside of tire. Presses button to commence spraying cycle. Lifts tire onto conveyor for transfer to storage.

8571-198 HEAT-SEALING-MACHINE TENDER (plastic prod.) DPT:685
 GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that heat-seals precut or preformed plastic material or film to form book covers, brief cases, wallets, purses, novelties and other plastic products:

Loads feeding mechanism with rolls or sheets of plastic materials or positions precut pieces on jig. Aligns edges of continuous plastic strips or pieces, and guides them into position under electrode. Starts machine and depresses pedal to lower electrode that seals edges of material. Sets controls on machine to adjust temperature, pressure and time cycle. Removes product from machine and stacks it for subsequent removal.

May place plastic sheets and paperboard against stops in tray on revolving table which automatically positions them under electrode. May remove excess material, using scissors. May examine articles for defects, such as smeared paint, cuts and wrinkled seams.

8571-202 PRESS TENDER(rubber) DPT:685
 GED: 2 SVP: 2 EC: 1 PA: M 4

Tends pneumatic presses to bond together rubber strips, used in manufacturing tarpaulins, footwear and other rubber products:

Lifts and positions rubber strips on machine bed between ram and press table or fixture. Moves lever to lower ram or raise table and press workpiece, bonding tacky parts together. Observes gauges and turns valves to maintain required air pressure. Examines workpiece for defects, such as loose edges or misaligned parts. Folds or rolls strips of material and places on handtruck, using chain hoist.

May apply bonding medium to seams, using hand brush or adhesive tape.

8571-206 RUBBER-TUBING SPLICER(rubber) DPT:685
 GED: 2 SVP: 2 EC: 1 PA: L 4

Tends battery of small vulcanizing presses that splice rubber tubing into continuous strips for use as automobile window, door and trunk seals:

Brushes rubber cement on ends of tubing and positions tubing in press for splicing. Sets automatic timer for specified curing time and closes press. Trims excess rubber from splice, using scissors or knife. Examines splice for breaks and places lengths of acceptable spliced tubing in container for removal to next process stations.

May bind end of tubing with rubber tape to reinforce splice.

8571-210 SPLICING-MACHINE TENDER(rubber) DPT:685
 GED: 2 SVP: 2 EC: 1 7 PA: L 4

Tends machine that fuses together ends of rubber tubing to form tires for industrial equipment, lawn mowers, golf carts and similar products:

Lifts rubber tube and bends it into circular shape with hands. Inserts ends of tube into clamps on machine. Depresses pedal to activate vulcanizing unit that fuses ends of tube-forming tire. Releases pedal and removes vulcanized tire.

8571-214 TUBE SPLICER, MACHINE(rubber) DPT:686
 GED: 2 SVP: 2 EC: 1 PA: L 4

Feeds machine that splices uncured rubber tubes to form inner tubes for tires:

Positions ends of tube in machine and starts machine that butt-splices ends. Lifts tube onto hook and places cylinders on hook under fold to prevent creasing.

May cut tube to specified length with knife before splicing. May punch hole at valve location, and secure valve to tube, with valve- press machine.

8571-218 HAND BONDER, RUBBER FOOTWEAR (rubber) DPT:687
 GED: 2 SVP: 2 EC: 1 PA: M 4 7

Presses together layers of uncured rubber parts or sections of rubber footwear, using hand roller or special tool:

Presses tool against designated area or part of workpiece; such as, shank, midsole, toecap, outsole or foxing, and rolls tool back and forth, or follows edge or seam until layers are pressed together. Removes footwear from end of conveyor line and rolls seams around edge of outsole as final assembly operation.

8571-222 PLASTIC-TOY ASSEMBLER(sport. & toy) DPT:687
 GED: 2 SVP: 2 EC: 1 PA: L 4 7

Fits and cements cast plastic parts together to assemble toys; such as, automobiles, boats, dolls, and animals:

Places male and female castings on solvent-saturated blanket jig, or sponges adhesive on parts. Fits and clamps castings in drying jig, or presses parts together to bond them, by hand or using foot- operated press. Inspects plastic toys and games for colouring and casting defects.

May assemble toys from parts made of various materials; such as, metal, cloth, vinyl and cardboard, by stapling, riveting or fitting in punched slots, or fastening with elastic bands. May fasten eyelets in parts, using automatic eyelet machine.

8571-226 RUBBER-CLOSURE INSTALLER(rubber) DPT:687
 GED: 2 SVP: 2 EC: 1 PA: L 4

Cements and installs closures in rubber products, such as, water bottles, ice bags and throat collars:

Selects closure according to size and type, and examines it for conformance to specifications. Brushes cement on contact areas of closure and product to be fitted, and allows it to dry. Dips closure in solvent before installing. Installs closure and applies hand pressure to ensure effective bond. Wipes excess cement from product and places on drying rack. Places dried products in tote-boxes and moves them to storage area, using handtruck.

May insert shields inside product to prevent soiling by cement during drying. May install valves in sundry items.

**8571-299 OTHER BONDING AND CEMENTING
OCCUPATIONS, RUBBER, PLASTIC AND
RELATED PRODUCTS**

This group includes bonding and cementing workers, not elsewhere classified, concerned with bonding and cementing rubber or plastic materials; for example, those who butt-join rolls of sponge rubber underlay to produce double-width product, build up rubber strips to form cups and rings for industrial-air-brake parts, fabricate rubber vacuum bags to withdraw moisture from laminated windshields and tend pressing machines to fuse latex to items such as belts, pocket books or handbag parts. Typical examples of occupational titles covered by this residual group definition are:

Latex Laminator, Machine(rubber)
Roll Joiner(rubber)
Rubber Cup and Ring Builder(rubber)
Vacuum-Bag Maker(rubber)

**8573-MOULDING OCCUPATIONS, RUBBER, PLASTIC
AND RELATED PRODUCTS**

This unit group includes occupations concerned with operating or tending machines that mould rubber, plastic or related materials by injection, compression or lamination to produce parts for mechanical or electrical equipment, and items such as household ware or rubber gloves; and shaping and vulcanizing by heat to produce tires and tubes or other items.

**Pressing Occupations
8573-110 through 8573-146**

**8573-110 PLASTICS-MOULDING-MACHINE
SETTER(plastic prod.) DPT:380**
set-up man, plastics.
GED: 4 SVP: 6 EC: I 5 6 PA: M 3 4 7

Sets up and adjusts compression, injection, or transfer machines, used to mould plastic materials according to specifications:
Positions assembled mould on press bed of moulding machine, or bolts matrix of unassembled mould to bed, aligns die (attached to ram) with matrix, and adjusts stroke of ram, using hand tools. Connects steam, oil and water-lines to mould, or adjusts controls to regulate temperature. Sets machine controls to regulate forming pressure of machine and curing time of plastic in mould, and installs knock out pins in mould, using gauges and hand tools. Starts machine to produce sample product. Examines sample for surface defects, such as bubbles, warping and scratches, and adjusts machine to eliminate defects.
May perform spot checks to ensure machines produce product according to specifications. May discuss production techniques with customer.

8573-114 RUBBER-STAMP MAKER(misc. prod. fab., n.e.c.) DPT:581
GED: 3 SVP: 6 EC: I PA: L 4 7

Sets type and operates mould presses to make printing face for rubber stamps:
Reads work order and studies sketch to determine wording and layout of finished stamp. Selects suitable type, places type in chase and proofreads assembled type face. Secures chase in press and places sheet of plastic moulding compound on press bed. Operates press, by pulling levers, to imprint type characters in moulding compound to form mould. Removes type chase and mould. Inserts soft rubber sheet above mould in vulcanizing press. Operates press by pressing pedal, so that combination of heat and pressure forms rubber printing stamp. May cut rubber printing stamp to fit mounting block, using scissors. May join parts, such as mounting block and handle, to form complete stamp.

8573-118 PLASTICS-PRESS OPERATOR(plastic prod.) DPT:682
GED: 3 SVP: 4 EC: I 3 6 PA: M 4

Operates hydraulic press to emboss, laminate, or draw plastic sheets:
Starts gas oven and sets thermostat to regulate oven temperature. Clamps sheet to overhead rack and pushes rack into oven to soften

sheet. Bolts dies or plates to bed of press and adjusts length of travel of ram arm, using hand tools. Positions softened sheet or layers of sheets on press bed and lowers pressure plate to hold sheets in place. Moves controls to lower ram that draws sheet through open die to specified shape, embosses sheet with specified design, or compresses layers of sheets to form laminated plastic board. Turns valves to regulate flow of water or steam through dies or plates to maintain forming temperature. Trims plastic, using shears, powersaw or knife. May operate vacuum machine to mould plastic products.

8573-122 BEAD-FORMING-MACHINE OPERATOR(rubber) DPT:682
GED: 3 SVP: 3 EC: I PA: M 4

Operates machine to coat strands of steel wire with rubber to form beads for use in making pneumatic tires:
Installs bead-forming wheel, dies, and baffles, and turns setscrews to adjust guides, spring tension, bead cutter arm, and bead forming wheel cycle according to specifications, using wrenches and screw-driver. Threads specified number of wires from spools through tuber die for rubber coating and into machine for forming into bead layers. Starts machine to feed wire through die and onto forming wheel. Cuts wire to remove bead layer from forming wheel when cycle is complete. Tapes cut end to hold bead together for wrapping or places bead in wrapping machine.

8573-126 STRIP-MACHINE OPERATOR(rubber) DPT:682
GED: 3 SVP: 3 EC: I 7 PA: L 4

Operates machine to produce wire-mesh-backed rubber strip for applications such as automobile weatherstripping or gasket material:
Installs machine parts such as engraved rollers and forming channels or tubes, using hand tools. Mounts spool of wire mesh onto holder and spot welds mesh leader to end of previous spool, threaded through machine. Adjusts rollers and guides to centre rubber strip in guides and to align mesh at correct depth in strip, using hand tools. Starts machine by pressing switch and observes emerging formed strip to ensure conformance to specifications. Adjusts roller speed or width and heat of vulcanizing units by turning screws or rheostats.

8573-130 PLATE CHANGER(plastic prod.) DPT:684
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Installs stamper disks (matrices) in presses that mould phonograph records:
Wipes press dies and backs of stampers with lint-free cloth to remove foreign particles. Examines surface of stampers under lamp to ensure that disks are clean and free from defects. Bolts stampers on press dies, using socket wrench. Places retaining rings over edges of stampers, inserts screws in rings and tightens screws, using screw-driver. Operates press to form sample record. Cleans and polishes stampers on polishing wheel, using brush, emery cloth, wax, detergent, or jeweller's rouge.
May connect steam and water-lines and adjust controls to regulate temperature, pressure and curing time.

8573-134 CURING-PRESS TENDER(asbestos & min. wool) DPT:685
GED: 2 SVP: 2 EC: I PA: M 4

Tends heated press to mould and cure brake lining material:
Places metal pattern of specified contour into press bed. Fills mould of preforming press with asbestos compound and operates press to preform linings. Positions preformed brake linings on press bed. Operates press for specified time by pressing buttons, to set shape and harden linings. Removes cured linings from press and loads them on handtruck for further processing.
May measure and cut lining stock to size, using shear.

8573-138 PRESSMAN(plastic prod.; rubber) DPT:685
mouldman.
GED: 2 SVP: 2 EC: I 3 PA: M 4

Tends heated press to mould and cure rubber or plastic products, such as floor mats and plastic contour chairs:
Sprays inner surfaces of moulding dies with parting agent to facilitate removal of cured product. Places thermoplastic material on lower die of press and aligns edges of die and material. Inserts metal parts, to be

bonded to rubber or plastic, into die contours. Operates press by pushing buttons, to mould and cure product for specified time. Opens press and strips away moulded article. Cleans residue from dies, using air jet and fine abrasives.

May inspect moulded products for defects. May spread bonding solution on lower die when producing plastic or fibreglass chairs. May draw material into contours of mould, prior to pressing, using vacuum device. May laminate and mould sheets of upholstery material, such as textile fabrics and rubber or plastic sheeting, and be designated accordingly; for example,

Floor-Mat Pressman Moulder, Rubber Gears
Footwear Moulder Upholstery Moulder

8573-142 RECORD-PRESS TENDER(plastic prod.) DPT:685
record maker.

GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends one or more hydraulic presses that mould phonograph records from heated biscuits (vinyl squares) or plastic compound:

Centers biscuit and record label on spindle in press bed, or moves controls to deposit measured amount of heated compound in press bed. Starts press that compresses biscuit or compound, under high temperature and pressure, to shape of stamper disks (matrices). Removes moulded record and mounts it on cutting-machine that automatically trims excess material from rim of record. Examines record surface for defects, such as pits in grooves, scratches, or burrs. May punch out large centre hole in 45 r.p.m. records, using punch press.

8573-146 VACUUM-FORMING-MACHINE TENDER(plastic prod.) DPT:685
blister former.

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends vacuum forming machine to mould plastic products such as automotive and appliance panels, luggage components and display or packaging material:

Places plastic sheet on top of mould. Positions sealing frame around sheet and clamps frame to mould rim. Starts machine, by pushing buttons, to form product by heating and vacuum-drawing sheet against mould. Releases vacuum and removes formed product from frame.

May set up forming machine by installing moulds and heating elements, using hand tools. May clean and polish moulds using abrasives and wax. May trim or punch formed panels, using shears or punch press.

Moulding Occupations
8573-162 through 8573-206

8573-162 HEARING-AID-EARPIECE MAKER(scient. & ind. equip., n.e.c.) DPT:681

GED: 3 SVP: 5 EC: 1 PA: S 4 7

Moulds and finishes plastic ear pieces for hearing aids:

Mixes ingredients to make plaster and pours it over wax pattern of ear canal to form mould. Allows plaster to set and removes wax pattern from mould. Mixes ingredients to make plastic compound and pours it into mould to form ear piece. Applies hot and cold water and air to mould, to cure plastic. Removes ear piece from mould and finishes surface, using knives and grinding and polishing wheels.

May provide channel for sound tube in earpiece, by inserting wire rod in mould before pouring plastic or by drilling hole after removal from mould.

8573-166 EXTRUDING-MACHINE OPERATOR(plastic prod.; rubber) DPT:682
tuber operator.

GED: 3 SVP: 4 EC: 1 7 PA: M 4 7

Sets up and operates machine to extrude rubber or thermoplastic material into rod, sheet or tubular form:

Installs dies and sizing rings in extruding machine, using hand tools. Couples air, steam or water hoses to machine and die-head connections. Weighs, mixes and dumps powdered or pelletized thermoplastic and pigmenting materials into hopper. Regulates vacuum, pressure and temperature controls to specified levels and starts machine by turning switches. Synchronizes speed of emerging extrusion with take-up reel or conveyor by turning knob. Examines extruded product for

defects, such as wrinkles, bubbles and splits. Measures extruded material for conformance to specified dimensions, using gauges and calipers.

May test physical properties of extruded material, using acid bath and burst or impact testing devices. May cut extrusions to desired lengths, using shears.

8573-168 PRINTING-ROLLER MOULDER(plastic prod.; rubber) DPT:682
composition man.

GED: 3 SVP: 4 EC: 1 7 PA: M 4 7

Prepares rubber, plastic or glycerine composition and operates moulding equipment to form printing press rollers:

Removes worn composition from roller shaft, using knife or stripping machine. Separates reusable composition segments from scrap. Loads segments into chopping machine and starts machine to reduce material to uniformly sized pieces. Dumps chopped material into melting kettle. Weighs and adds sufficient new compound or glycerine, water and other ingredients to form desired quantity of moulding material. Melts and mixes ingredients for specified time by turning heater, timer and agitator switches. Applies parting compound to roller mould to facilitate removal of moulded roller. Fits centering devices onto core and loads it into horizontal mould, using hoist. Seals moulding cylinder cover plate, using wrenches, and couples air and liquid lines between compressor, kettle and cylinder. Opens valves to force moulding composition from kettle into mould cylinder. Cures moulded roller by allowing hot water to flow through hollow jacket of mould. Frees roller from mould by turning valves to force kerosene and air between roller and inside face of moulding cylinder. Removes moulded roller from cylinder, using hoist. Inspects roller surface for defects and trims roller edges, using knife.

May remove wrinkles from surface of roller, using gas torch and hand roller.

8573-170 DISPLAY-MANNEQUIN MOULDER(plastic prod.) DPT:684

GED: 2 SVP: 4 EC: 1 7 PA: L 4

Constructs hollow plastic mannequin parts, such as arms, legs and torsos, using either of the following methods:

1. Brushes release agent onto inside surfaces of moulds to facilitate removal of cured part. Selects and positions aluminum limb attachment blocks in mould recesses. Brushes liquid plastic onto mould inner surfaces. Builds up laminated form by placing layers of fibreglass strands on prepared surfaces, and brushes successive coats of liquid plastic onto fibreglass strips. Applies thickened layer of liquid plastic to edges of moulds to form seam. Bolts mould halves together, using nut runner, and places assembled mould on drying rack. Opens mould after specified time and removes cured form, using screwdriver or pry bar. 2. Brushes release agent onto mould surfaces. Places layers of cloth in mould halves and smooths wrinkles from cloth. Presses pliable plastic composition material into mould contours. Fits wooden and aluminum stiffeners and limb attachment blocks into place. Closes mould halves. Builds up moulded form by pouring successive coatings of liquid plastic into mould, using pail, and allowing each coating to dry. Opens mould and removes form after specified curing time. Trims projections from moulded form, using knife.

8573-174 RUBBER MOULDER(rubber) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Moulds rubber display statuettes and models of hands, feet, and heads for attachment to display mannequins:

Brushes lubricant onto interior of mould. Pours latex into mould until full. Pours surplus latex from mould after shell has formed to specified thickness on inside of mould. Strips cured form from mould. Trims edges of form with knife and smooths surface with sandpaper.

May place mould in cabinet oven to cure latex.

8573-178 COMPRESSION-MOULDING-MACHINE TENDER(plastic prod.) DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: M 4

Tends compression-moulding machines to mould plastic products by heat and pressure according to specifications:

Brushes or sprays paste wax onto inside surfaces of dies or mould halves to facilitate removal of moulded form. Sets thermostat to regulate mould temperature. Casts part, using either of following

methods: 1. Dumps specified amount of plastic compound or pellets into hopper of machine, or positions pellets in mould installed on machine. Presses button to start machine that compresses plastic into mould under heat and pressure. Allows plastic to set for specified time. 2. Weighs premixed plastic compound and pours compound into die well. Pulls lever to lower hydraulic ram that compresses compound between dies to form and cure part. Removes product from mould and cleans mould, hopper, and bed of machine, using airhose and hand tools.

May verify conformance of moulded product to specifications, using fixed gauges. May place thermosetting plastics material on hot grid or in oven to soften it prior to moulding. May mix catalysts and colouring pigments with plastic compound, using paddle or mixing machine. May tend machine to compress powdered plastics into pellets used in moulding plastic products and be designated accordingly. Preform-Machine Tender

8573-180 IMPREGNATOR-CORRUGATOR, PLASTIC SHEETS(plastic prod.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends machine that impregnates fibreglass matting with plastic resins and forms and cures it to produce corrugated plastic sheets: Weighs specified quantities of plastics ingredients on scale and dumps them into feed hopper. Pours premixed resins into spray tank. Draws sheets of fibreglass matting and cellulose film or wax paper from feed reels, and threads sheets through rollers of impregnating machine. Moves lever to regulate tension on sheeting. Starts machine and opens valve to spread resin compounds over cellulose or wax paper sheeting prior to its contact with fibreglass matting. Observes passage of sheeting through rollers, corrugating moulds in forming frame and curing oven. Moves frame to ensure alignment of laminations. Maintains specified flow of resins, speed and temperature, by monitoring gauges, valves and switches. Patches tears in sheeting, using gummed tape. Changes corrugating moulds as required to conform to product specifications.

8573-182 PLASTICS CASTER(plastic prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Cast thermosetting plastic resins in mould to form plastic products: Coats mould sections with parting agents, such as soap, wax, or lacquer, using brush or spray gun. Clamps or bolts together sections of mould, using hand tools. Weighs or measures specified amounts of resin, catalyst, pigment, and hardening agent, using balance scale or measuring cups, and mixes them in container, using mixing machine or paddle. Pours mixture into mould and places mould in oven or water-bath cooker to cure. Removes product from mould, using airhose and hand tools. May trim product, using knife, scissors, or file.

8573-186 EXTRUDING-MACHINE-OPERATOR HELPER(plastic prod.; rubber) DPT:684
GED: 2 SVP: 2 EC: 1 7 PA: M 4

Helps extruding machine operators in extruding rubber or thermoplastic material into rod, sheet or tubular form: Attaches end of extruded product to take-up reel. Starts machine to rotate reel and wind product into spool. Removes wound spool from holder, using hoist. Weighs spool and records weight and length of extruded material. Feeds scrap thermoplastic material into mill to grind it for re-processing. See also definition for term title, 02-160 HELPER (any ind.).

May mix thermoplastic ingredients and pigments according to formula and dump mixture into feed hopper. May adjust slitting device to cut extruded product to specified dimensions. May inspect extruded material for defects, using gauges, and advise machine operator of deviations from specifications.

8573-190 BLADDER MOULDER(rubber) DPT:685
GED 2 SVP: 2 EC: 1 PA: M 4

Tends heated press to mould and cure rubber bladders used in tire manufacturing:

Weighs specified quantity of rubber blocks, using scales. Positions bag core in mould, using hoist. Fills mould with rubber blocks. Closes mould and starts timed curing cycle by pressing switch. Opens mould and removes core at end of cycle. Clamps bag core firmly, by pulling lever, and pulls bladder free, using hoist.

8573-194 INJECTION-MOULDING-MACHINE TENDER(plastic prod.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends injection-moulding machines to form products from thermoplastic materials:

Dumps premixed plastic powders or preformed plastic pellets into hopper of moulding machine. Starts machine that automatically liquifies pellets or powder in heating chamber, injects liquified material into mould, and ejects moulded product, or starts machine and pulls lever to close dies and inject plastic into dies to cast part. Observes gauges to ensure specified moulding temperature and pressure are maintained. Removes product from dies or mould, using hand tools. Examines moulded product for surface defects, such as cracks, dents, and voids. Trims excess material from product, using knife. May grind scrap plastic into powder for reuse.

8573-198 SKIN FORMER(plastic prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine to form padded automotive products, such as dashboards and door panels, by performing any combination of the following tasks:

Lifts precut skin (plastic sheeting) from oven conveyor and stretches it over jig. Depresses pedal to create vacuum in jig to draw skin over jig contours, and smoothes wrinkles with hands. Sponges or hoses skin with water, or presses button to rotate skin under water and air jets to cool skin and set shape. Trims skin to specified shape, using knife or shears. Releases vacuum and lifts formed skin to rack. Sets oven controls for specified temperature. Moves skins to and from oven, using conveyor.

8573-200 SOFTBALL-CENTER MOULDER(sport & toy) DPT:685
GED: 2 SVP: 2 EC: 1 3 PA: M 4

Tends moulding press to mould cork and rubber compound into softball centers:

Weighs cork and rubber compound on scale. Pours specified amount of compound into packing machine which forms a slug of compressed compound. Positions slug in mould cavity of press, closes press, and sets heating cycle. Removes moulded softball-core on completion of heating cycle and trims flash from core using hand tools.

May tend compression moulding machine to form rubber golf-club grips. May tend moulding press to mould solid golf-ball centers and be designated accordingly. Golf-Ball-Center-Moulder

8573-202 TIRE-TREAD MOULDER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 3 PA: H 4

Tends moulds that vulcanize new rubber to form tread patterns on tire casings in retreading plant:

Places tubular air-bag inside tire casing, to which new tread rubber has been cemented, using spreading device. Opens half of doughnut-shaped tire mould and clamps tire into mould. Inflates air-bag to specified pressure and closes mould. Opens steam valve to heat mould to form and cure tread pattern. Removes tire after predetermined time and trims loose rubber from tread, using knife.

8573-206 MOULD FILLER AND STRIPPER(plastic prod.) DPT:887
GED: 2 SVP: 2 EC: 1 PA: M 4

Cast and cures plastic products; such as, dolls and other toys, by performing any combination of the following duties:

Cleans moulds, using cloth and solvent. Fills mould with pre-measured amount of plastic compound by pressing trigger of dispensing gun or by opening tank discharge valve. Clamps cover on mould and loads mould onto oven conveyor for curing for specified time. Removes mould from conveyor after cooling. Sets mould into stripping position by moving lever. Removes cover plate and plugs from mould, using power wrench. Strips products from mould, using pliers.

May inspect products for defects.

Curing Occupations
8573-222 through 8573-299

8573-222 CURING PRESSMAN(rubber) DPT:660
GED: 3 SVP: 5 EC: 1 3 PA: L 4 5 6

Sets up and operates single or double-deck platen curing press to cure transmission or conveyor belting:
Directs and assists crew members engaged in setting up, according to specified width of belt, pressure, temperature, and curing time. Sets up sections of press by positioning guide stops to accommodate thickness of belt to be cured. Examines sections of press for conformity to set-up specifications and verifies temperature and time settings. Observes machine operation to detect malfunction.

8573-226 FOAM-RUBBER CUREMAN(rubber) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends control panel to process latex mixture into foam rubber blocks:
Turns switches to pump latex liquid and air into foaming tank. Verifies density of sample cup of mixture by weighing sample on scales and comparing weight with known standard. Fills moulds from foaming tank by operating valve controls. Regulates heat in curing tunnel and starts conveyor to carry moulds through tunnel, by turning switches.

8573-230 V-BELT CURER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Operates equipment to cure v-belts, using either of the following methods:

1. Brushes parting agent onto grooved drums at each end of adjustable frame to facilitate removal of cured belts. Fits belts onto frame and aligns belts in parallel rows in individual v-shaped grooves of drums. Applies tension to belts by turning handwheel. Pushes loaded frame under curing press. Starts press to cure sections of belt adjacent to heated face for specified time, by pressing buttons. Turns crank to move belts to cure successive sections. Removes frame from curing press when entire length of belts has been cured. Releases tension from belts and removes belts from drum grooves, using wooden paddle. 2. Fits belts to individual, grooved, disk-shaped moulds. Combines moulds into cylinder-shaped unit by drawing them together, side-by-side, using threaded rod and power wrench. Positions assembled moulds between parallel, contra-rotating rollers. Threads water-soaked cloth liner through tension guides and around moulds. Rotates rollers to wrap cloth tightly around perimeter of moulds, by pressing switch. Ties securing cord around cloth-faced mould. Loads moulds into heated, horizontal curing compartment, using handtruck and hoist. Seals door and admits steam to compartment, for specified time, by turning wheel and opening valve. Removes cured belts from compartment and places mould on bench. Unwraps cloth binding from mould, using winding device. Disassembles mould, using nut runner. Removes cured belts from disks and places belts on racks.

8573-232 FIRE-HOSE CURER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 4 6 PA: H 3 4

Tends steam-heating equipment that cures rubber in jacketed firehose:
Lifts pre-cut lengths of specified rubber tubing and braided fabric hose jacket onto assembly table. Dusts rubber tubing with chemical compound to prevent tubing from sticking to jacket. Turns crank to wind tubing onto stock wheel. Aligns jacket with mechanical threading device and clamps threading fixture to end of rubber tubing. Depresses button to start winch that pulls tubing into jacket. Lifts and clamps ends of jacketed hose to fixtures on steam lines. Presses hose into curing cavities on table that hold hose in flattened position when curing. Observes gauges and turns valve to inject steam into hose at specified temperature and pressure for curing. Coils and lifts cured hose onto storage rack.

8573-233 HEATER TENDER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 6 7 PA: M 4 7

Tends horizontal pot heaters or cylindrical ovens that cure rubber goods:
Places trays of rubber goods such as hose, footwear, or airplane fuel tanks on truck. Moves loaded truck into heater. Turns capstan wheel

to secure heater door. Turns valves to control steam flow and regulate temperature and to admit ammonia, when specified. Observes heating time, or sets automatic timer to ascertain that curing cycle is completed, and releases steam from heater. Removes truck from heater and unloads it. Keeps record of temperature and pressure graphs.

May place weights, pads and rubber sheet around airplane fuel tanks preparatory to heating to prevent blistering, improve heat circulation and facilitate curing. May observe instrument panel to detect malfunctions of equipment.

8573-234 VULCANIZER TENDER(rubber) DPT:685
tire cureman; tube-vulcanizer tender.
GED: 2 SVP: 2 EC: 1 3 6 PA: M 4

Tends battery of automatic presses to vulcanize pneumatic tires and tubes, performing any combination of the following duties:

Cleans moulds, using air hose, and sprays mould with parting agent to prevent tires from sticking. Conveys tires containing air bags to presses, on handtruck, or lifts tires from conveyor and positions them in moulds. Places uncured tubes around pre-forming mould and partially inflates tube, using air hose. Lifts partially inflated tubes from mould and positions them in curing moulds. Couples air or steam hose to air bag or tube valve to expand tires or tubes and press them against mould, or places tires over steam bladders in mould, and inserts serial number die in mould. Sets timer for automatic curing cycle, and pushes switch and turns steam valve to close press and start curing process. Lifts tires and tubes from moulds at end of cycle, using hoist or hydraulic hook, and places them on handtruck or conveyor. Places uncured tires on press bed and pushes switch to start machine that automatically picks up, cures, and places tires on conveyor in programmed series of operations.

May insert air bags in tires before curing, and debag tires after curing. May inflate tube after curing to prevent distortion while cooling. May be designated according to product cured or type of press tended; for example,

Air-Bag-and-Tube Cureman
Watchcase-Vulcanizer Tender

8573-299 OTHER MOULDING OCCUPATIONS, RUBBER AND PLASTIC PRODUCTS

This group includes rubber and plastic products moulding workers, not elsewhere classified; for example, those who mould footwear components, plastic prosthetic appliances, and shotgun shell casings. Typical examples of occupational titles covered by this residual group definition are:

Ankle-Patch Moulder(plastic prod; rubber)
Arch-Cushion-Press Operator(plastic prod; rubber)
Encapsulator(plastic prod.)

8575-CUTTING AND FINISHING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

This unit group includes occupations concerned with cutting, assembling and finishing rubber and plastic stock to produce parts and products by setting up, operating, adjusting and tending machines, and by using hand tools. Includes activities such as: laying out, cutting, fitting, splicing, cementing, assembling, measuring, trimming, grinding, buffing, and repairing products made of rubber, plastic and related materials.

8575-110 FLOOR-COVERING-INSET CUTTER(linoleum prod.) DPT:481
GED: 3 SVP: 6 EC: 1 PA: L 4 7

Lays out and cuts decorative insets for hard-surface floor covering:
Lays out design and makes pattern, using drafting tools. Selects floor covering material according to pattern specifications. Lays out materials according to pattern colours, ensuring maximum utilization of material. Transfers design to material, using carbon paper or jig. Heats area of material to be cut, to soften and prevent material from cracking, using heated warming table and portable heater. Gouges or cuts out design, using gouging tools or electrical cutting machine.

Forms complete design by fastening sections together, using masking tape. Fills in gouged lines with colours to enhance appearance of finished product.

8575-114 PLASTIC-SHEET WORKER(plastic prod.) DPT:481
GED: 3 SVP: 6 EC: 1 5 PA: M 4 7

Fabricates products; such as, signs, windows, boat windshields and aircraft parts from plastic sheet, by performing any combination of the following duties:

Lays out pattern on plastic sheet according to specifications, using templates, rule, compass and marking pencil. Cuts part from sheet, using router or power saw. Softens plastic part in oven, and shapes heated part to specifications, using form, air mould, press or jig. Cuts, drills, slots, trims or shapes part, using router, milling machine, power saw, power drill, shaper or lathe. Fits and assembles parts in jigs, using clamps, clips, bolts, screws, rivets, glue and hand tools. Sands and polishes part or assembly, using rouge, portable sander and buffing machine. Verifies dimensions, using rule, calipers and gauges. Examines article for defects.

May fabricate articles, using plastic rod or tubes. May fit plastic sheets to wood or metal frames to make skylights, using cork-line sealing tape, adhesives and caulking gun. May repair damaged or defective plastic products. May be designated according to type of product produced; for example, Aircraft-Plastic-Trim Assembler Sign Trimmer and Assembler

8575-118 DISPLAY-BALLOON MAKER(misc. prod. fab., n.e.c.) DPT:284
GED: 4 SVP: 5 EC: 1 PA: L 2 3 4 7

Designs and fabricates stationary or airborne inflatable balloon- type figures for use in parades, carnivals and advertising displays:

Designs patterns according to customers' requirements and prevailing ranges of climatic conditions, using knowledge of fabrics and aerodynamic principles. Marks cutting lines on material, such as plastic, nylon and rubberized fabric, following pattern, and cuts out pieces, using shears. Assembles figures, using either of the following methods: 1. Sews pieces to form stationary figures, using double-needle sewing machine. Installs electric inflation blowers in figures. 2. Cements pieces to form airborne figures, using rubber cement and solvent. Inserts bladder and air hose connections in specified locations of figures. Inflates figures and inspects for leaks.

May install zippers and illumination units in stationary figures. May spray lacquer on figures. May print designs on balloons, using silkscreen method.

8575-122 ARCH-CUSHION-SKIVING-MACHINE OPERATOR(rubber) DPT:682
GED: 3 SVP: 4 EC: 1 PA: M 4

Operates machines to cut arch cushions from sponge rubber sheeting for rubber footwear:

Selects die plate or die drum to produce specified size cushions, and bolts it in feeder slide or locks it in cradle, using wrenches. Turns setscrews to adjust distance between hold-down roller, belt knife and plate or drum, verifying clearances with feeler gauges. Produces arch cushions using either of the following methods: 1. Pulls plate length of sheeting from roll, cuts with knife and places on die plate. Moves lever to open suction valve that draws rubber sheeting into die plate cavities. Depresses pedal causing sheeting on plate to be carried through belt knife that cuts cushions flush with plate surface. Returns plate to starting position. Removes scrap and places in bin. Removes cut-out cushions from die cavities and places in storage box. 2. Mounts roll of sheeting in cradle, threads around hold-down and guide rollers, over rotary die drum and onto takeup reel. Starts automatic machine that cuts cushions from sheeting. Positions carton under discharge end of conveyor to catch cushions. Records number of cushions cut.

8575-126 BIAS-MACHINE OPERATOR(rubber) DPT:682
GED: 3 SVP: 3 EC: 1 PA: M 4

Operates machine to cut rubberized fabric on bias for use as plies or other components in tire construction:

Turns thumb or setscrew to adjust measuring arm, protractor and liner roll, to feed and cut fabric to specified width and angle of bias. Pulls fabric from roll on letoff rack, inserts through liner roll, and positions under knife on bias machine table. Starts machine and adjusts speed

of feed and cutting action. Measures plies to verify width and angle, using ruler and protractor. May align and splice plies by overlapping ends and pressing together with fingers

8575-130 OUTSOLE-CUTTING-MACHINE OPERATOR(rubber) DPT:682
sole cutter.
GED: 3 SVP: 3 EC: 1 PA: M 4

Operates machine that cuts outsoles for rubber footwear from slabs of uncured rubber:

Reads work ticket to determine number of pairs required of each size sole. Selects follower (template) from storage rack according to number specified on work ticket, and bolts it in machine, using wrench. Selects and mounts cutting blade in traveller against follower, using screwdriver. Lifts slab of stock from carrying frame or slides slab onto table. Places slab on metal cutting board and positions end beneath cutting blade. Adjusts height of machine to thickness of slab. Depresses pedal to elevate table and push stock against template, and to activate blade and cut outsole from slab. Works pedal to alternately raise and lower table, sliding cutting board width of one sole each time table descends, until maximum number of soles have been cut from slab. Slides board onto workbench. Observes cut outsoles for ragged edges denoting dulled blade. Sharpens dulled blades, using hand file and grindstone or electric grinder.

May grasp corner of slab and flip off scrap web, leaving outsoles on board. May throw web on scrap rubber pile or into scrap truck, and place outsoles on mobile storage racks. May set up and operate machine that automatically cuts outsoles from slabs of uncured rubber and be designated accordingly, Outsole Cutter, Automatic

8575-134 RUBBER-GOODS CUTTER-FINISHER(rubber) DPT:682
GED: 3 SVP: 3 EC: 1 PA: L 4 7

Operates one or more of a variety of machines to cut, drill, punch or grind moulded and extruded rubber goods:

Changes dies, drills, knives, grinding wheels and cutter bars as specified. Adjusts equipment; such as, boring machine, tubing cutter, notch cutter and washer cutter, using hand tools. Positions material, such as moulded rubber parts, gaskets and tubing, in specified machine and starts machine to bore or punch holes in parts, cut washers from tubing or cut tubing to length. Verifies size of rubber goods with calipers, ruler, plug gauge and template. Inspects material and rejects defective items.

May be designated according to machine operated or product finished; for example,

Boring-Machine Operator
Cutting-Machine Operator
Gasket Notcher
Roll Grinder(plastic prod.; rubber)
Washer Cutter

8575-138 AIR-BRAKE-HOSE BUILDER AND FINISHER(rubber) DPT:684
GED: 3 SVP: 3 EC: 1 PA: L 4

Builds, cures, inspects and packages rubber air-brake hose used on railroad cars and transport trucks:

Pulls rubber tubing onto mandrel and positions in machine. Brushes rubber cement on tubing to provide adhesive surface. Applies layers of plystock and gumstock, according to specifications, by pressing pedal of machine to revolve mandrel and wind layers around tubing. Presses plies together to insure adhesion, using hand roller. Places brand impression plates at specified locations on hose. Places caps in ends of hose and winds fabric wrapper around hose preparatory to curing. Cures hose in horizontal heater. Removes wrapper and caps, positions cured hose in air-powered stripping fixture, and pulls lever to blow hose from mandrel. Buffs ends of hose to specifications, using electric buffing wheel. Verifies hose dimensions, using fixed gauge and rule. Examines hose for defects, such as cuts, blisters and cracks. Pulls brand plates from hose and packages hose for shipment.

8575-142 CUTTER, RUBBER AND PLASTICS(plastic prod.; rubber) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Cuts rubber and plastic sheet to produce parts for footwear, gaskets, diaphragms and similar products:

Mounts specified roll of sheet material in letoff rack. Pulls material from roll onto worktable. Cuts material into specified sizes and shapes, using templates or patterns, knife, scissors or cutting machine. Records information on work ticket.

May cut articles from slab rubber or plastic, using ruler and knife. May trim, grind, buff or drill articles, using a variety of machines.

8575-146 GASKET MAKER, CONCRETE PIPE(rubber) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Fabricates rubber-ring gaskets for concrete pipes by either of the following methods:

1. Measures out specified amount of extruded rubber strip by feeding it into water tank until tank gauge indicates correct displacement. Marks rubber at waterline, places it in mitre box and cuts off measured length, using tenon saw. Forms ring-shaped gaskets by joining ends of rubber, using vulcanizing cement and electrically heated vulcanizer. Tests strength of gasket by stretching it to twice its diameter, using pneumatic puller. 2. Places rubber strip on measuring table and cuts to predetermined over-size length, using knife and clamping device. Weighs strip and cuts end to reduce to desired weight. Forms ring-shaped gasket by joining ends of rubber strip, using vulcanizing cement and electrically heated vulcanizer. Tests strength of gasket by hand pulling at vulcanized joint.

8575-150 PADDED-PRODUCTS REPAIRMAN(plastic prod.; rubber) DPT:684
GED: 2 SVP: 3 EC: 1 7 PA: L 4 7

Repairs defects and finishes padded products, such as automotive dashboards, by performing any combination of the following duties: Cleans surface of padded article, using solvent and rags. Inspects article for defects, such as voids, wrinkles, abrasions, faulty adhesion and faulty trimming. Pours or injects rubber foam solution between padding and plastic covering to rectify faulty adhesion. Repairs abrasions, faulty trimming and other defects, using knife, scissors, hand buffing wheel and rubber foam solution. Removes wrinkles by softening plastic with hot air blower or heat gun and pressing out wrinkles by hand.

May weigh and mix ingredients to make rubber foam solution. May verify size, colour and quality of articles for conformance to standards, using micrometers, checking fixtures and gauges, and colour samples.

8575-154 REELER AND CUTTER, PLASTIC MATERIAL(plastic prod.) DPT:684
cutter, barrel drum.
GED: 2 SVP: 3 EC: 1 PA: H 3 4

Slits and winds plastic material onto reel, and cuts into pre-determined lengths, for use in making articles, such as curtains and draperies:

Positions roll of plastic material on machine brackets, threads end of material through tension rollers, and clamps or tapes material to rod on reels. Turns handwheel or loosens bolts with wrench, and moves rods to specified length. Adjusts knives to slit material into specified widths. Depresses pedal to start, stop and control speed of machine. Observes material as it is slit and wound onto reel, to detect uneven winding, and straightens uneven edges by hand. Stops machine after specified number of revolutions, and cuts material on reel by drawing knife through slot in reel rod. Removes lengths of material from reel and places on table. May lubricate and repair machine.

8575-158 WINK CUTTER(rubber) DPT:684
uncured-hose cutter, machine.
GED: 2 SVP: 3 EC: 1 4 PA: M 4

Cuts extruded uncured hose into specified lengths:

Sets cutting blades to specifications by turning adjusting dial. Threads extruded strip between feeder belts to cutter. Turns wheel to adjust

feed speed to length of hose cut. Starts machine and measures hose blank for conformance to specifications. Inspects green hose for defects as it emerges from tuber machine and cooling tank, into cutter. Removes cut pieces from discharge belt and places them in containers.

8575-162 AIRCRAFT-TIRE-TUBE BALANCER(rubber) DPT:684
tube balancer.
GED: 2 SVP: 2 EC: 1 PA: M 4

Balances tubes for aircraft tires:

Inflates tube with airhose. Fits tube over hub of gravity balance wheel to locate heavy area. Selects balance patch to equalize weight. Buffs area manually, to roughen surface for better adhesion, using buffing paper. Brushes on cement and applies patch to correct imbalance, using hand roller.

8575-166 BEAD ROLLER, BALLOON(rubber) DPT:684
collar roller, balloon; ring-rolling-machine operator.
GED: 2 SVP: 2 EC: 1 PA: L 4

Rolls beads on necks of balloons prior to curing:

Lifts latex-dipped form boards from wheeled rack onto bead-rolling table. Turns wheels to adjust spacing and height of parallel revolving brush arms, to correspond with diameter and edge of balloon necks. Pushes sliding table forward to roll balloon necks into beads. Lifts form boards of beaded balloons from bead-rolling table onto wheeled rack.

8575-170 FOAM-CUSHION FABRICATOR(furn.; plastic prod.; rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Cuts, cements and assembles cushion interiors from rubber or urethane foam slabs or sheets:

Positions pattern on foam slab or sheet and marks outline with chalk. Cuts around outline, using electric knife, air scissors or bandsaw. Places two pieces together, sprays cement along edge and presses edges of pieces together to form cushion interior. Cements strips around edges of assembled pieces and over seams to provide smooth finish and to reinforce seams, preparatory to upholstering.

May insert assembled cushion interior into cushion case preparatory to sewing. May stuff cushion cases with foam rubber or urethane scrap to form cushions.

8575-174 LUGGAGE-BINDING ASSEMBLER(leather goods; plastic prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Cuts, splices and fits plastic binding to luggage:

Positions corner posts on stretching device, using screwdriver. Inserts stop pin in channel of cutting jig at specified length. Lays binding in channel up to stop pin and cuts to length, using knife. Presses switch to heat electric knife. Positions ends of binding on either side of knife slot. Raises knife by depressing pedal, and melts binding by holding ends against knife. Lowers knife by releasing pedal, and joins ends of binding to form loop. Fits binding loop around posts of stretching device. Stretches binding by pulling handle or depressing pedal of stretching device. Releases handle or pedal and simultaneously slides binding onto luggage.

8575-178 RUBBER BUFFER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 7 PA: M 4 7

Roughens or cleans rubber surfaces on tires, inner tubes, belts, or parts for rubber footwear:

Mounts buffing wheel on mandrel according to type of finish required, using wrench. Starts buffer and holds article against it, or holds buffing wheel against article. Places buffed articles on conveyor, skid or in container.

May mount pneumatic tire on rotating spindle and remove specified width of black rubber overcoating, to reveal white sidewall, using hand grinding wheel. May measure and cut belt lengths to specified dimensions prior to buffing, using scissors or knife. May brush rubber cement on buffed ends of belt, preparatory to splicing. May be designated according to article buffed; for example,

Belt Buffer Tire Finisher
Buffer, Rubber Footwear Parts White-Sidewall-Tire Buffer, Hand

8575-182 SKYLIGHT ASSEMBLER(plastic prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Assembles and polishes plastic dome skylights:
Places aluminum frame on assembly table. Masks frame with adhesive-backed cork tape. Attaches dome to frame with nuts, bolts and screws, using electric drill and electric screwdriver. Polishes dome to remove blemishes, using electric buffer.
May fit metal spacing ring between upper and lower domes when assembling double-insulated skylights.

8575-186 SOLID-TIRE FINISHER(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: H 4

Trims, inspects and buffs solid tires:
Trims mould flash from center of tread, and excess rubber from edge of rim band, of cured solid tire, using knife. Brushes paint on inside edge of rim band to prevent rust. Buffs tire to remove defects and foreign material and impart smooth finish, using power buffing wheel.
May brand solid tires according to specifications, using hand brander.
May cure solid tires, using pot heater.

8575-190 STOCK LAY-UP MAN(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: H 4

Supplies plies of cloth, rubber or rubberized fabric to lay-up table for cutting rubber footwear parts:
Selects roll of material according to job order. Positions roll in cradle, using hoist. Clamps end of material in slot in winding drum and notes yardage indicator reading. Starts material winding by moving lever to engage clutch of winding drum. Stops machine when specified number of turns have been recorded on indicator. Partially cuts through plies, using knife. Climbs onto wide lay-up table, completes cut and pulls lay-up from drum onto table. Smooths material to remove wrinkles and lay it flat for cutting.
May convey material to wind-up drum, using handtruck. May tape or tie ends of unused material and return it to storage, using handtruck.

8575-194 TIRE TRIMMER, HAND(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: M 4

Trims excess rubber formed on tires during curing process:
Positions tire on machine-driven rollers. Holds knife at angle to tire to cut off excess rubber while rollers are revolved mechanically. Pulls lever to remove trimmed tire from rollers and places on conveyor.

8575-198 TRIMMER, MACHINE(rubber) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Trims flash from moulded rubber articles, such as rubber heels, soles and tops, using cutting machine:
Starts machine and positions workpiece against guard, presenting all edges to reciprocating or rotating blade to remove excess material. Depresses pedal to raise guard so that seams will not be jagged or torn. Trims heels by setting them on base plate and turning heels by hand against matching circular knives.
May be designated according to type of moulded rubber article trimmed; for example,
Heel Trimmer
Sole Trimmer
Top Trimmer

8575-202 AUTOMOTIVE-RUBBER-PARTS CUTTER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 Tends press that

cuts and trims cured-rubber automotive parts, such as floor mats and splash guards, from moulded rubber sheets by either of the following methods:

1. Seats die on table of press. Positions rubber sheeting on die and lowers cover plate. Presses button to move pressure roller across cover plate to die cut and trim rubber sheet. 2. Selects and secures cutting die to press head, using clamps or bolts. Positions and aligns rubber sheet on press bed, using aligning marks on bed as guide. Pushes buttons to raise press bed and die-cut and trim rubber sheet.

8575-206 EDGE GRINDER, FLOOR TILE(linoleum prod.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: M 4

Tends machine that squares and smooths edges of plastic floor tile:
Places stack of tile on table of machine. Taps edges with mallet to align them against preset guide shoes. Presses button switches to engage guide shoes and move stack of tile between abrasive grinding drums or grinding wheels. Rotates tile on table and repeats operation on opposite edges. Places finished tile on conveyor or skid.
May adjust guide shoes for squareness, using wrenches and tile gauge.
May replace worn abrasive paper on grinding drums.

8575-210 FOOTWEAR-TREAD-MACHINE TENDER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 5 6 PA: L 4 7

Tends automatic machine that cuts patterns in soles of rubber footwear:
Clamps sole on slide carriage under blade of machine. Starts machine by depressing button and moves lever to depress tool that cuts single wavy or zigzag row in sole. Raises tool by moving lever and returns carriage to starting position by depressing pedal. Repeats process to cut additional rows. Removes finished workpiece and examines depth of cut, using mould mark on sole edge as guide. Raises or lowers blade to adjust depth, using wrench.

8575-214 FREEZE-TUMBLER TENDER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 3 4

Tends dry-ice tumbling machine to remove moulding flash from rubber products:
Moves boxes of moulded products from storage area to tumbling machine, using handtruck. Loads tumbling machine with specified quantity of product. Breaks dry ice into pieces, using hammer, and dumps into machine. Starts machine to mix product and dry ice. Stops machine for specified time to allow freezing of mould flash. Restarts tumbler and runs for specified time to break off flash. Dumps load into containers and separates product, dry ice and mould flash.

8575-218 INNER-TUBE-PROCESSING-EQUIPMENT TENDER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends inner-tube processing equipment that automatically applies soapstone to tube, cuts valve hole, presses valve to tube, imprints identifying information on tube and cuts tubed stock to length:
Sets transmission levers, that synchronize automatic devices, according to job order specifications. Presses button to start machine and observes stock for defects as it moves on conveyor. Washes valve base, using solvent, and lays valve manually on acceptable stock after machine cuts valve hole and prior to machine pressing valve to tube. Changes imprinting dies and cleans devices. Replenishes supply of paint and soapstone.

8575-222 RUBBER-BAND CUTTER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that cuts cured-rubber tubing into rubber bands:
Fills tank in front of machine feed rolls with soap solution and places quantity of tubes into tank to facilitate cutting. Selects switch to start machine and conveyor. Pulls tubes from tank and starts ends into feed-rolls.
May change gears that regulate speed of cutting-machine feed-rolls.

8575-226 SPLITTING-MACHINE TENDER(rubber) DPT:685
tire debader.
GED: 2 SVP: 2 EC: 1 5 PA: H 4

Tends machine that cuts scrap tires for reclaiming rubber:
Adjusts guides to accommodate tire size and cut to be made, and installs blades, using hand tools, or tends machine equipped with endless-belt-type saw. Lifts tire onto powered rollers by hand or with hoist. Starts rollers that force tire against blade of saw to split tire into plies, shear tire into sections, sever bead from tire and trim rubber from carcass.
May tend machine that splits rubber or vinyl sheets into plies.

8575-230 STRAP-CUTTING-MACHINE TENDER(rubber; shoes) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that cuts strip of plastic-coated fabric or leather into exact lengths, for use as buckle or decorative stitching straps on shoes: Bolts appropriate cutoff wheel to drive shaft, using wrenches. Positions and bolts backing wheel against cutoff wheel, using wrenches. Mounts roll of strip in holder and threads end through guide and between wheels. Positions carton to catch straps. Starts machine and observes automatic counter to determine when required number of straps are cut. Observes strip for flaws and removes defective straps.

8575-234 TILE CUTTER(linoleum prod.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends punch press that cuts floor tiles from plastic sheet: Starts machine to move plastic sheet through press, to punch out floor tiles. Feels material for flexibility as it enters machine and has temperature of feed rolls adjusted as required. Observes sheet for uniformity of colour pattern and presses button to bypass defective sections. Stops machine to clear press when jams occur. May manually feed vinyl sheet into punch press. May adjust press controls as required.

8575-238 TREAD CUTTER, MACHINE(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends machine that cuts extruded rubber for tire treads: Turns crank and observes dial to adjust automatic cutter frame for specified cutting cycle. Starts machine to cut rubber as it passes on conveyor. Measures and weighs treads. Swabs beveled ends of tread with cement to prepare them for splicing. Lifts treads onto trays for storage and places rejects on conveyor for retubing. Tags trays to identify treads. May convey loaded trays to storage area, using handtruck.

8575-242 TREAD CUTTER, TRUCK TIRES(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: H 4

Tends machine that cuts truck treads and sidewalls to specified lengths preparatory to tire building: Adjusts stop on machine to set specified length, by turning handwheel. Positions and clamps stock under cutting blade and against stop. Pulls rotating blade across stock to cut and bevel ends. Brushes liquid cement on underside of tread and sidewall for subsequent bonding. Attaches identification tags to treads and sidewalls and places them in tray trucks.

8575-246 V-BELT FINISHER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends any of a variety of machines that notch, measure, test and print identifying information on rubber V-belts: Positions V-belt on expandable wheel of notching machine. Presses button to start machine that notches inside surface to make belt flexible. Adjusts specified weight tension on measuring machine and positions belt on machine spindles. Presses button to rotate spindles that register belt length on gauge and stamp it on belt. Inserts plate in branding machine. Feeds belts into machine to print them with identifying information. Positions belt on spindles of vibration test machine. Pushes lever to start machine that drives belt at specified speed. Observes belt for wobble and scraps defective belts. Stamps acceptable belts, ties them in bundles and hangs them on rack. May operate normalizer machine that applies heat and adjusts belts to identical length and width to produce matched belt sets. May be designated according to machine tended; for example, Belt Brander
Belt Cogger
Belt Measurer

8575-250 V-BELT SKIVER(rubber) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that cuts and shapes edges of uncured rubber belts into V shape: Turns belt inside out and fits it over machine holding spindles. Adjusts angle of cutting knives by turning screws. Presses button to start machine to rotate and skive belt. Removes belt from machine and

hangs it on storage rack. Weighs trim and adjusts knives, using hand tools, to meet belt shape specifications.

8575-254 WASHER-DRIER, RUBBER PRODUCTS(rubber) DPT:685

tumbler tender.

GED: 2 SVP: 2 EC: 1 PA: M 3 4

Tends tumbling machines to wash and dry rubber products, such as rubber bands, bath caps and nipples: Loads containers of rubber product onto handtruck and pushes it to washer-tumbler. Dumps products into washer and opens valves to admit water and cleaning solution. Starts machine to tumble wash for specified time. Opens valves to drain machine and admit rinse water. Unloads products from washer onto wheeled table and moves table to dryer. Loads specified quantity into dryer and sets controls for specified heat and tumble time. Unloads products from dryer into containers and removes to storage area or bundling and boxing machines by handtruck. May trim excess rubber from edges of article, using scissors. May tend tumblers that dry and screen latex balloons preparatory to testing, printing or stocking and be designated accordingly. Tumbler Tender, Balloons

8575-258 INNER-TUBE-PROCESSING-EQUIPMENT UTILITY MAN(rubber) DPT:686
GED: 2 SVP: 2 EC: 1 7 PA: M 4

Services automatic inner tube processing equipment that cuts tubed stock to length, prints identifying information, punches valve holes, presses valves on tubing, and applies soapstone to stock: Places marking stamp in machine and clamps it in place. Fills reservoir with marking ink or paint. Fills soapstone tanks. Trucks valve assemblies from storage to work area. Verifies that tubes are cut to specified length and receive adequate external soapstone coverage. Sorts and removes valves from uncured scrap tubes, using knife, and transports tubes to mills for remilling, using handtruck. Relieves or substitutes for tube processing equipment crewmembers. May assist millman to load and unload mills and start feeder strip from mill to tuber machine. May assist in cleaning tube processing equipment and changing dies.

8575-262 HOSE CUTTER, HAND(rubber) DPT:687
GED: 2 SVP: 2 EC: 1 PA: H 4

Winds, measures and cuts rubber hose to specified length: Positions reels of hose in letoff rack and empty reels in powered windup rack. Verifies hose diameter, using gauges. Threads hose through measure meter, printing machine and onto empty reel. Starts powered windup by depressing pedal and guides hose onto reel in windup rack. Examines hose for defects, such as snags, cuts and bulges. Observes measure meter and cuts hose to length, using knife. Records information on identification tag. Ties and packages coiled hose.

8575-299 OTHER CUTTING AND FINISHING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

This group includes rubber, plastic and related products cutting and finishing workers, not elsewhere classified; for example, those who cut and inspect vinyl sheet; mask and finish, by hand or machine, plastic sheets or products; cut extruded rubber into specified lengths for inner tubes; tend machines that punch valve stem holes in inner tubes, change brands on cured repaired tires, buff rubber soles, heels and taps to obtain soft or suede finish, clip threads connecting rubber footwear parts, sand flash from moulded golf ball covers, cut plastic tile into small squares for samples, fabricate polyurethane covering for pipes, punch-out and shape plastic button blanks, and perform a variety of operations in manufacturing bowling balls from pre-moulded blanks. Typical examples of occupational titles covered by this residual group definition are:
Finisher, Plastic Sheets(plastic prod.)
Inner-Tube Cutter(rubber)
Tile-Sample Cutter(plastic prod.)
Tire Rebrander(rubber)
Windshield-Plastic Processor(plastic prod.)

8576-INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: FABRICATING, ASSEMBLING AND REPAIRING, RUBBER, PLASTIC AND RELATED PRODUCTS

This unit group includes occupations in inspecting, testing, grading and sampling work as described under the term titles 02-170 INSPECTOR (any ind.), 02-430 TESTER (any ind.), 02-150 GRADER (any ind.), and 02-330 SAMPLER (any ind.), concerned with quality control activities in the fabricating, assembly, and repair of rubber and plastic and related products.

8576-110 EXPERIMENTAL-TIRE INSPECTOR(rubber) DPT:281

GED: 3 SVP: 6 EC: 1 PA: L 4 7

Tests experimental tires and determines strength, wearability, and cause of failure:
Inflates tire on test machine and adjusts controls to simulate road conditions. Maintains periodic follow-up on test until tire fails, or has run for specified time. Cuts cross section from test tires, new experimental tires, or actual road tested tires, using power saw. Counts bead wires and plies in cross section, verifies angle of plies with protractor, and measures specified areas on tire to ascertain effects of testing. Records test results and prepares graphs to compare test results.

8576-114 ELECTRICAL-RUBBER-GOODS TESTER(elec. power) DPT:381
GED: 3 SVP: 5 EC: 1 6 PA: L 4 7

Tests and inspects rubber protective articles; such as, gloves, sleeves, blankets or mats, used during repair work on high-voltage powerlines and equipment:
Examines rubber goods to detect defects, such as blisters, breaks or deterioration. Clips test electrodes of dielectric-strength- testing machine to rubber article and partially submerges article in water tank of machine. Adjusts controls to apply excessive voltage to electrodes and article. Observes apparatus for flash-over or opening of circuit breaker, indicating defective article. Reads millimeter on panel to determine if amount of current passed through article is within prescribed tolerance. Tests rubber mats by placing them on aluminum table top and lowering overhead electrode to testing position and applying voltage. Tests other types of rubber articles, using specialized test equipment. Inflates gloves on special apparatus to detect holes or weak areas. Discards defective goods.
May make mechanical tests on articles, using apparatus, such as tensile-testing machine, micrometers and rule.

8576-118 INSPECTOR, PLASTIC AND RUBBER PRODUCTS (plastic prod.; rubber) DPT:367
GED: 3 SVP: 5 EC: 1 PA: M 3 4 7

Inspects completed rubber or vinyl products, or products in process, for conformance to specifications:
Measures product width, length and inspects markings, using ruler, thickness gauge, protractor and book specifications. Verifies temperatures and pressures on machine recording instruments. Tags substandard products and discusses defects with department supervisor. Writes reports on all substandard products.
May inspect storage area to ensure specified racking of finished goods.

8576-122 GREEN-TIRE INSPECTOR(rubber) DPT:487
uncured-tire inspector.
GED: 3 SVP: 5 EC: 1 PA: M 4 7

Inspects uncured tires to ensure conformance to standards:
Measures tread width and side wall dimensions with ruler and gauge. Weighs randomly selected tires for conformance to specified tolerance and records weights. Examines tires for defects; such as, open splices, loose edges, wrinkles and trapped air between plies. Stamps approved tires and marks rejected tires for further processing.
May repair defects, using solvent and hand tools.

8576-126 LINOLEUM INSPECTOR(linoleum prod.) DPT:367
GED: 3 SVP: 4 EC: 1 PA: L 4 5 7

Inspects floor covering, such as linoleum and vinyl for pattern or colour defects, and grades according to quality:
Assists other workers to mount roll of finished floor covering on unwind stand. Signals operator to start machine that pulls floor covering across cutting table. Visually examines material for defects, such as cracks, flaws and variations in colouring as it unwinds onto table. Marks defective areas with tape or cuts indicator mark into material, depending on length of defective area. Signals other worker to cut out defective sections. Resets counter after each cut. Grades floor covering for quality in accordance with company specifications. Removes sample for laboratory tests.

8576-130 LINOLEUM-LINE INSPECTOR(linoleum prod.) DPT:367

GED: 3 SVP: 4 EC: 1 PA: S 4 5 7

Inspects linoleum for processing defects during manufacture:
Examines material, as it passes between processing equipment and roll winder, for coating, colour, saturation or pattern defects. Identifies and records defects. Measures thickness of material to ensure compliance with specifications, using micrometer or snap gauge. Advises machine operator of deviations from standard.

8576-134 TIRE CLASSIFIER(rubber) DPT:387
GED: 3 SVP: 4 EC: 1 PA: M 3 4 7

Examines defective tires, rejected at inspection station, to determine extent of repair and disposition of tires:
Probes tire defects with hand tools to determine extent of damage. Classifies and groups repairable tires according to defects; such as, spread, cords, ply separations, buckles, and blisters and sends tires for repair. Prepares daily report of defects.

8576-138 TIRE-RETREADING INSPECTOR(rubber) DPT:387
GED: 3 SVP: 4 EC: 1 PA: H 3 4

Inspects used tires to be retreaded or repaired for automobiles, buses, trucks and other automotive vehicles:
Visually examines cord, bead and sidewall of tire for breaks and other defects. Places tire on tire-spreading machine and examines inner surface of tire for defects. Marks defect with chalk to indicate repairs required prior to retreading. Rejects tires that cannot be retreaded.

8576-142 FOAM-RUBBER-GOODS INSPECTOR(plastic prod.; rubber) DPT:387
GED: 3 SVP: 3 EC: 1 PA: M 4 7

Inspects and classifies foam rubber or plastic cushions and mattresses for conformance to specifications:
Examines cushion or mattress to locate defects, such as lumps, tears and snags. Steps on treadle to lower hydraulic plunger onto cushion to test pressure resistance. Stamps cushions with grade mark if accepted, or marks defective areas, and places in piles according to classification. May verify weight of mattress, using scale. May be designated according to type of product inspected; for example, Mattress Inspector
Rubber-Cushion Inspector

8576-146 PHONOGRAPH-RECORD TESTER(misc. prod. fab., n.e.c.) DPT:387
GED: 3 SVP: 3 EC: 1 PA: S 4 6 7

Inspects and tests newly pressed phonograph records:
Inspects records for defects, such as high spots, stains or scratches. Places record on turntable and observes lateral movement of stylus to ensure it is within prescribed tolerance, using concentricity tester or calibrated microscope. Plays record on sound reproducing equipment, checks fidelity and listens for pops, ticks or distortion. Compares number imprinted on record with serial number of label, and ensures that selections on record conform to printed label. Checks center hole diameter, outside diameter, thickness and weight, using center hole gauge, outside diameter gauge and scale. Records details of defects found and returns record to pressing department.

8576-150 TIRE INSPECTOR(rubber) DPT:684
GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Inspects cured tires to ensure conformance to standards:
Examines tires, mounted on revolving turntable or suspended from hooks on moving conveyor, for defects, such as sidewall cracks, foreign material and blisters. Feels beads to detect kinks and feels inner surface of tire to detect spread cords, ply separations or buckles. Marks defects, and sorts tires for removal to other departments. May inspect inner tubes. May trim toe of bead and mould overflow with knife. May lift tire manually or with hoist onto turntable.

8576-154 PICKER, BEAM PRESS(rubber) DPT:487
clicker.
GED: 2 SVP: 2 EC: I PA: L 4 7

Inspects, counts, bundles and racks footwear parts cut from layers of cloth and rubber or plastic-coated fabric:
Picks up parts at receiving table. Examines parts for defects, such as double thickness of stock. Counts parts by multiplying number of cuts by number of plies (layers) specified for ply-up on work ticket. Arranges similar parts in stacks containing set number to prevent crushing and ties bundles with string. Places bundles on shelves of rack cart, in order of use by part numbers and sizes. Records number of parts processed.

8576-158 FORCED-VARIATION TESTER(rubber) DPT:685
tire measurer.
GED: 2 SVP: 2 EC: I PA: M 4

Tends automatic machines that measure circumferences and tread widths of cured tires:
Sets measuring machines to accommodate specified tire sizes by turning dials. Sorts cured tires according to size shown on sidewall and loads conveyor leading to machines. Removes tires from conveyor and positions on hubs of machines. Presses button to activate machines that automatically inflate and rotate tires according to specifications. Observes indicator lights on machine panels and records result of tests on tire treads. Removes tires from machines and sorts for final disposition.

8576-162 HOSE INSPECTOR AND TESTER(rubber) DPT:687
GED: 2 SVP: 2 EC: I PA: M 3 4

Inspects and tests rubber hose for manufacturing defects:
Sorts hoses by type and examines them for defects; such as, cuts, blisters, irregular colour and faulty printing. Measures inside and outside diameters of hose, using steel rule, gauges and plugs. Attaches hose to waterline and caps open end of hose, using wrenches. Subjects hose to specified water pressure, examines hose and marks leaks. Records inspection data and attaches inspection tag to hose. May attach couplings to hose, using assembly press and hand tools. May paint brand or identification markings on hose, using brush and stencil.

8576-166 INNER-TUBE INSPECTOR(rubber) DPT:687
inner-tube deflator.
GED: 2 SVP: 2 EC: I PA: M 4 7

Inspects cured rubber inner tubes for defects:
Inflates inner tube, using air hose. Examines tube and valve assembly for defects, such as blisters, cracks and thin spots. Marks defective tubes and places them in scrap container. Deflates acceptable tubes, using vacuum pump and stacks them in storage area according to size and type.
May install cores and locknuts in valve stems of acceptable tubes, using power tools. May bend valve stem, using hand-operated device.

8576-170 INSPECTOR-TRIMMER, MOULDED PLASTIC AND RUBBER(plastic prod., rubber) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4 7

Inspects and trims moulded plastic and rubber articles, such as plastic shotgun shells and rubber-coated metal parts:
Visually inspects parts for defects, such as cracks, tears and blisters. Trims flash from part, using knife, scissors or cutting machine. Weighs and packs acceptable parts in containers.

May buff mould flash, using hand buffing wheel. May verify size of part, using plug gauge, calipers and micrometer. May return rubber-coated metal parts to moulders for repair and recure.

8576-174 MATTING INSPECTOR(rubber) DPT:687
GED: 2 SVP: 2 EC: I PA: M 4 7

Inspects rolls of sponge and solid rubber floor matting for defects:
Positions roll of matting in letoff rack, using hoist, and unwinds onto inspection table. Examines matting for defects, such as blisters, tears and irregular colouring, while matting winds onto powered windup spindle. Cuts out defective sections, using knife. Splices matting as required, using gumstock filler, and spot cures, using portable vulcanizer. Cuts to length according to customer specifications.
May insert inspected roll of rubber matting in bag and tag it for shipment.

8576-178 RUBBER-FOOTWEAR INSPECTOR AND TESTER(plastic prod.; rubber) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4 7

Inspects, classifies and sorts component parts or finished rubber or plastic footwear, by performing any combination of the following duties:
Examines footwear parts; such as, insoles, outsoles, heels and uppers for blisters, folds, pits or ragged edges. Visually examines completed articles of footwear for defects; such as, misplaced or misaligned parts, bulges, improper colour, loose or dropped stitching. Compares items with work ticket and specifications for quantity, part number, size and colour. Sorts items into piles according to colour, size and lot number. Classifies items as firsts, seconds or rejects, and records quantities. Removes soiled spots during inspection, using cloth and solvent. Notifies supervisor of recurring defects.

8576-182 GRADER, RUBBER BALLOONS(rubber) DPT:687
GED: 2 SVP: 2 EC: I PA: S 4 7

Inflates, examines and grades rubber balloons:
Inflates balloon by fitting balloon orifice over nozzle, and moving knee-operated air valve. Examines inflated balloon for leaks or weak spots. Sorts deflated balloons, according to inspection, as scrap, seconds or approved.

8576-186 TIRE-BALANCE INSPECTOR(rubber) DPT:687
GED: 2 SVP: 2 EC: I PA: M 4 7

Inspects cured tires for conformance to balance specifications:
Lifts tire onto balance table, manually or with hoist. Pulls lever to spread holding fixture that secures tire in position. Releases lock that permits balance table to float freely on mounting, and bubble gauge to function. Observes bubble gauge to determine if tire balance is within specified limits. Marks tire where gauge indicates lightest area, for location of inner-tube valve, or where dough (uncured rubber) is to be added on unacceptable tires. Lays aside unacceptable tires and lifts acceptable tires onto conveyor.

8576-199 OTHER INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

This group includes rubber, plastic and related products inspectors, testers, graders and samplers, not elsewhere classified; for example, those who inspect air bags, golf balls or other rubber products, sort and pair footwear, sort rubber tires, and inspect foam plastic products. Typical examples of occupational titles covered by this residual group definition are:
Inspector, Golf Ball(rubber; sport. & toy)
Inspector, Sample Parts(plastic prod.; rubber)
Rubber-Goods Tester, Water(rubber)
Sorter, Footwear(rubber)

8578-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: FABRICATING, ASSEMBLING AND REPAIRING RUBBER, PLASTIC AND RELATED PRODUCTS

This unit group includes occupations in labouring or other elemental work, as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.), concerned with fabricating, assembling and repairing a wide variety of rubber, plastic and related products.

8578-110 MOULDING-MACHINE OFFBEARER(plastic prod.)
DPT:686

GED: 1 SVP: 2 EC: 1 3 5 PA: L 4

Offbears moulded products, such as fountain pen bodies, novelty goods and appliance components, from compression or injection moulding machines:

Removes moulded products from machine outlets. Inspects parts for obvious defects, such as cracks and gouges. Dumps acceptable parts into container. Opens machine outlet gate at regular intervals and removes waste plastic pieces. Dumps waste pieces into grinder for re-use.

May maintain specified temperature and pressure within machine by turning dials and switches.

8578-112 BALLOON-FORM STRIPPER AND CLEANER(rubber)
DPT:686
GED: 1 SVP: 2 EC: 1 PA: M 4

Strips cured and dipped rubber balloons from forms and cleans forms by performing any combination of the following duties:

Pulls form boards bearing balloons from curing oven, using hooked rod. Places boards on rack and dips assembly into detergent solution, to facilitate removal of balloons and impart glossy finish, using hoist. Lifts form boards from solution and places board on holding jig. Expands and frees balloon from form by directing air jet into balloon mouth. Strips balloon from form and drops balloons into box. Smooths, washes and dries balloon forms, using abrasives, water and compressed air jet. Positions form in vise and straightens and tightens components of form, using hand tools.

May immerse forms in cleaning solution, at specified intervals, to remove built-up residue.

8578-114 BIAS-MACHINE-OPERATOR HELPER(rubber)
DPT:686
GED: 1 SVP: 2 EC: 1 PA: VH 3 4

Helps machine operators to cut rubberized fabric for use as plies or other components in tire construction:

Conveys fabric and liner rolls to machine area, using hand truck. Positions rolls in letoff and windup racks of bias-cutting machine, using hoist. Threads fabric over machine-guide rolls. Lifts cut plies from bias-cutting machine and places them on table for splicing. Tags filled rolls according to type of stock and conveys them to storage area, using handtruck. See also definition for term title, 02-160 HELPER (any ind.).

May splice plies by hand.

8578-118 FOOTWEAR-MOULD-PRESS FEEDER(rubber)
DPT:686
GED: 1 SVP: 2 EC: 1 3 6 PA: M 4

Feeds presses which cut and form rubber footwear parts, such as uppers and arch-cushions, by performing any combination of the following duties:

Folds prepared rubber sheeting longitudinally and feeds folded sheeting beneath dies of toggle press to cut shoe uppers. Places uncured rubber arch-cushion blanks in mould cavities. Positions loaded moulds on conveyor leading to vulcanizing press. Unloads moulds from press output conveyor. Shakes moulds to release cured cushions into containers. Places empty moulds on return conveyor.

May spray release agent on moulds to facilitate removal of cured cushions.

8578-122 HOSE LOADER AND STRIPPER(rubber) DPT:686
pole-up man.
GED: 1 SVP: 2 EC: 1 PA: H 4

Fits tubular rubber core onto hollow mandrel and removes finished hose from mandrel after winding and curing process:

Lifts hollow, steel, pole-shaped mandrel, onto bed adjacent to friction

belt, using hoist. Pulls end of rubber hose core onto tapered end of mandrel. Starts friction belt and lowers mandrel onto belt, to draw rubber tubing along mandrel pole. Expands tubing, by applying air pressure gun to end of tubing, to facilitate movement onto mandrel for hose manufacture. Moves mandrel loaded with finished hose onto stripping table, using hoist. Clamps end of mandrel pole in vise. Presses pneumatic or hydraulic pressure gun against end of hollow mandrel. Applies pressure, by pressing trigger, to blow cured hose from mandrel.

8578-126 MOULDED-PRODUCTS FINISHER(plastic prod.; rubber)
DPT:686
trimmer, moulded products.
GED: 1 SVP: 2 EC: 1 PA: L 4

Trims, forms and finishes moulded products, such as stair treads, tiles and foam cushions, by performing any combination of the following duties:

Places section of moulded composition material on bed of shear. Cuts section into individual tiles or stair treads and trims edges by pressing pedal on shear. Cuts flash and trims excess material from moulded cushions, using power scissors. Clamps stair treads in fixture, and pulls lever to press edge of treads against heated pipe for specified time to form moulded lip on tread edge. Sorts and loads finished items into cartons or onto conveyor.

8578-130 MOULD FILLER(plastic prod.; rubber) DPT:686
pour man.
GED: 1 SVP: 2 EC: 1 PA: L 4

Fills curing moulds with liquid plastic or latex to form moulded products, such as shoes or seat cushions:

Inserts hose nozzle in orifice to fill closed moulds, or presses hose trigger or pulls lever to fill open moulds passing on conveyor. Passes scraper across top of open mould to remove surplus plastic or latex and ensure smooth surface of product after curing.

May stir liquid in mould, to remove air bubbles, using paddle. May rub compound between fingers to determine consistency.

8578-138 RUBBER-SOLE BUFFER, AUTOMATIC(rubber)
DPT:686
GED: 1 SVP: 2 EC: 1 5 7 PA: L 4

Feeds pair of automatic machines that grind edges of moulded soles to roughen them for foxing and to remove sprue:

Starts machines and depresses pedal of first machine to separate toothed feeder wheels. Clamps sole between wheels and against rotating vertical buffing wheel that grinds excess material from sole edge as feeder wheels automatically turn sole. Observes sole edge after one rotation to verify complete removal of sprue. Removes buffed sole from machine and places it in container. Loads second machine while first is operating and alternates between both.

8578-142 STRIPPER, MOULDED PRODUCTS(plastic prod.; rubber)
DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Strips moulded rubber or plastic products, such as gloves, toys or shoes from moulds and lasts, by performing any combination of the following tasks:

Lifts mould from drying oven conveyor and clamps mould in holder. Removes form-mounted glove from mould by striking form to loosen glove. Strips glove from form and sets form aside for re-use. Mounts cotton gloves on wooden forms ready for coating and smooths glove on form to avoid wrinkles. Strips plastic toys or parts from moulds. Dips articles in solvent to cleanse them. Cleans moulds, using cloths, and returns moulds to casting department. Grips heels of each alternate pair of shoes on conveyor to loosen them and facilitate removal by next worker on line. Removes moulded boots and shoes from lasts on conveyor by simultaneously pulling top of article, using hooked air-pressure pipe, and grasping heels with hand. Mounts lasted shoes on floor jack, and strips shoes from lasts by pressing pedal to force compressed air between shoe and last.

May count and record number of articles handled. May inspect articles for defects.

8578-146 TIRE CLEANER AND PAINTER(rubber) DPT:686
tire finisher.
 GED: 1 SVP: 2 EC: 1 7 PA: M 4

Cleans, trims and feeds tires into spray painting machine by performing any combination of the following duties:
 Observes automatic feeding of tires into trimming machine. Frees tires jammed in machine or feed conveyor. Cleans surface of tires to remove inspection markings and prepare tire for painting, using glycerine solution and brush. Feeds tires into spraying machine to spray decorative and protective coating on finished tires.
 May trim loose rubber, white sidewall covering or protrusions from tire, using grinding wheel or hand-held blade. May fill spraying machine reservoir.

8578-150 TIRE-VALVE WORKER(rubber) DPT:686
 GED: 1 SVP: 2 EC: 1 PA: L 4

Prepares valves for fitting to rubber tubes by performing any combination of the following duties:
 Loads valves into buffing fixture to remove mould flash and to roughen valve base to facilitate bonding. Examines valves to ensure satisfactory buffing. Places valves, core-end first, into rotating fixture that applies rubber cement to valve base. Assembles laminated valve tube mounts by cementing together alternate oval layers of rubber and rubberized fabric. Presses flat steel valve base into orifice on large truck and tractor tubes. Fits washer and nut onto threaded valve stem and tightens nut, using wrench. Dumps valve cores into machine hopper. Blows foreign matter from valve stem orifice, using air-jet. Holds valve stem against machine outlet and presses pedal to screw core into stem.
 May spread rubber cement onto valve bases, using brush. May inflate tubes, using airhose, and inspect tubes for leaks. May install valve cores manually, using special tool. May be designated according to task performed during valve assembly; for example,
 Valve Buffer
 Valve Cementer
 Valve-Core Inserter
 Valve Fitter

8578-154 MOULD PREPARER(plastic prod.) DPT:687
mould waxer.
 GED: 1 SVP: 2 EC: 1 7 PA: M 3 4

Cleans and waxes moulds used in the manufacture of fibreglass products, such as boats, automobile bodies and buoys:
 Washes mould with solvent to remove old wax, using cloth or sponge. Waxes and polishes surface of mould with cloth or brush. Sprays or brushes parting agent on mould to facilitate removal of product. Applies masking tape to edge of mould to prevent resin from adhering to mould.
 May remove products from moulds, using airhose or wooden pegs and mallet. May fill and sand rough or damaged sections of moulds.

8578-158 EYEGLASS-FRAME TRIMMER(scient. & ind. DPT:886
equip., n.e.c.)
 GED: 1 SVP: 2 EC: 1 PA: S 4 7

Attaches ornamental trim to plastic eyeglass frames:
 Places plastic frame and metal or plastic trim parts in jig to hold trim in position during drilling and rivetting operations. Holds assembly on bed of drill press and pulls lever to drill holes through trim parts and frame. Inserts rivets into holes and places assembly on bed of arbor press. Peens rivets to attach trim to frame. Removes finished frame from jig.

8578-162 RUBBER-FOOTWEAR SUB-ASSEMBLER(rubber) DPT:886
booker.
 GED: 1 SVP: 2 EC: 1 PA: L 4

Assembles alternate pre-cemented layers of rubber and rubberized fabric to form book-like components for rubber footwear by performing any combination of the following duties:
 Places alternate strips of rubber and treated fabric between layers of cloth attached to boards, to prevent adherence between layers and to form books. Places books on conveyor leading to calendering machine. Removes assembled layers from books passing on conveyor

from calendering machine. Hangs boards on hooks of handtruck. Places alternate rubber and fabric layers on sheet. Aligns layers to allow adequate margin for subsequent bonding. Repositions parts to avoid wrinkles and presses parts together, using hand roller. Removes poorly cemented or badly wrinkled parts.
 May apply cement to strips, using brush. May write identifying data on wooden book covers. May clean covers, using water and sponge.

8578-166 BELT LAMINATOR, HAND(plastic prod.; rubber) DPT:887
 GED: 1 SVP: 2 EC: 1 7 PA: L 4

Applies bonding solution on leather and plastic belt laminations, prior to decorative stitching operation:
 Rubs wax on plywood board to prevent belt laminations from sticking to board. Positions row of laminations on board. Presses button to start electrically powered spray gun to coat laminations with latex bonding solution. Carries board of coated laminations to drying racks. Fills spray gun with latex solution when required.

8578-170 EYEGLASS-PAD CEMENTER(scient. & ind. equip., DPT:887
n.e.c.)
 GED: 1 SVP: 2 EC: 1 7 PA: S 4

Cements plastic nose pads to eyeglass frames:
 Soaks tray-mounted sponge with acetone. Fits plastic eyeglass frames to metal jig. Presses exposed area of frame against sponge to prepare surface for fitting of pads. Picks up pad with tweezers and dips pad in acetone solution. Presses pad against specified point on eyeglass frame and maintains pressure until pad is firmly bonded to frame.

8578-174 TIRE-BAND WRAPPER(rubber) DPT:887
 GED: 1 SVP: 2 EC: 1 PA: L 4

Wraps anti-adherent cloth liners around tire component bands:
 Places tire band between pair of cloth liners. Hangs assembly over arm of wrapping device. Turns crank to wrap band between cloth liners. Places wrapped bands in trays according to size.
 May build laminated tire ply bands, using ply stock, solvents and rotating drum device.

8578-178 STRING-TOP SEALER(plastic prod.) DPT:686
 GED: 1 SVP: 1 EC: 1 PA: L 4

Seals string in top of plastic produce bags:
 Places bag on sealing machine mandrel and positions string on bag with ends under holding clip. Depresses pedal to fold and seal hem around string at top of bag. Removes bag from mandrel. Examines hem for defective sealing.

8578-182 AIR-BAG EXTRACTOR(rubber) DPT:886
 GED: 1 SVP: 1 EC: 1 3 7 PA: H 4

Extracts air bags from cured tires:
 Lifts tire from conveyor, using hoist. Fits protective metal ring over tire bead. Positions and secures tire in chuck by pulling lever. Fits chain hook around air bag inside tire. Starts machine by pressing switch, to pull air bag from tire. Loads de-bagged tire onto conveyor. May draw off water from air bag by fitting suction tube into orifice of bag.

8578-186 CEMENTER, HAND(plastic prod.; rubber) DPT:886
 GED: 1 SVP: 1 EC: 1 PA: L 4

Applies cement to edges and surfaces of plastic or rubber footwear to facilitate bonding of parts:
 Dips applicator in cement and spreads cement along designated surfaces, or positions template on part and applies cement around it. Loads prepared footwear parts onto conveyor or into container with edges overlapping, to facilitate subsequent assembly with other parts.

8578-190 OPENING-MACHINE FEEDER(rubber) DPT:886
GED: 1 SVP: 1 EC: 1 PA: L 4

Feeds machine that forces apart sides of channeled rubber stripping stuck together during curing:
Starts machine and pushes end of stripping through machine opening onto die and under feed rollers that pull strip along die to separate sides.
May feed strip through machine attachment that punches air vent holes in stripping.

8578-194 TREAD-SPLICE PRESSER(rubber) DPT:886
GED: 1 SVP: 1 EC: 1 7 PA: M 3 4

Feeds hydraulic press that bonds tread splice of uncured tires:
Lifts tire and positions tread splice on arm of rotating press that automatically lowers roller arm that bonds splice. Places bonded tire on conveyor leading to spray booth, for spraying with light oil prior to curing.

8578-198 SOLID-TIRE MOUNTER(rubber) DPT:887
GED: 1 SVP: 1 EC: 1 5 PA: L 4

Mounts solid rubber tires on wheel rims for articles, such as tricycles and baby carriages:
Places tire into hydraulically operated machine jaws. Depresses pedal to close jaws which grip and stretch tire. Positions wheel rim on spindle mandrel at centre of tire. Pushes button to open jaws to mount tire on rim.

**8578-299 MISCELLANEOUS OCCUPATIONS IN
LABOURING AND OTHER ELEMENTAL
WORK, RUBBER AND PLASTIC PRODUCTS**

This group includes rubber and plastic products labourers and other elemental workers, not elsewhere classified; for example, those who dust and spray rubber products prior to curing, pick bead wires from ground rubber tires on conveyors, clean foreign matter from inside of rubber fuel tanks, and load, wind, unload and coil rubber and plastic tubing from various machines. Typical examples of occupational titles covered by this residual group definition are:

Bead Picker(rubber)
Breakout Man(rubber)
Flour-Stock Man(rubber)
Hose-Tubing Backer(rubber)
Tuber-Machine-Operator Helper(rubber)

**8579-FABRICATING, ASSEMBLING AND REPAIRING
OCCUPATIONS, RUBBER, PLASTIC AND RELATED
PRODUCTS, N.E.C.**

This unit group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing a variety of rubber, plastic and laminated-fibreglass products.

8579-110 RUBBERIZING MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: 1 PA: M 4 7

Repairs and maintains rubber-covered and rubber-lined equipment, such as impellers, pipes, pumps, valves, conduits and ventilators:
Dismantles equipment and removes damaged parts. Examines exposed rubberized equipment or part for flaws and excessive wear. Selects rubber stock according to type of materials and manufacturer's specifications. Prepares surfaces of equipment, to ensure adherence of lining, by grinding surface, using air grinder and electric polishing machine, and filling surface cracks and holes with caulking compound, using putty knife. Brushes adhesive material onto surfaces to be covered and presses and smooths lining material into place, using hand roller.
May make paper patterns for equipment lining and cut rubber or neoprene material, following pattern and using scissors and knife. May place material in time and temperature controlled oven for curing. May remove air bubbles in lining, using hypodermic needle.

8579-114 ROLLER REPAIRMAN(plastic prod.; rubber) DPT:681
GED: 3 SVP: 6 EC: 1 7 PA: M 4

Repairs damaged or defective plastic and rubber rollers used in a variety of printing presses and machines:
Positions damaged or defective roller on repair stand, manually or using hoist. Examines defect tag on roller to determine roller hardness. Cuts piece of plastic material from repair stock, using knife, or selects appropriate rubber roller repair kit. Lights torch and carefully heats damaged or defective area. Applies repair material to damage or defect to blend in with surrounding area, using knife and torch. Rolls repaired area with hand roller to compress and smooth repair and remove air. Regrinds and polishes repaired roller surfaces, using lathe and polishing machine.

8579-118 WET-SUIT MAKER(garment & fabric) DPT:381
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Measures, cuts and assembles diving outfits, such as wet suits, hoods and jackets:
Measures customer for size, using tape measure. Draws pattern for suit, to customer's measurements, on paper, using crayon. Cuts out paper pattern, using scissors. Outlines pattern on wet-suit material and cuts along outlines, using shears. Fits dome fasteners and zippers to suit sections, using press and adhesives. Assembles suit by joining sections, using needle and thread, sewing machine and adhesives. Fits suit on customer and makes alterations as required. Applies water-proof tape over seams to prevent water seepage through needle holes.

**8579-122 FOAM-PLASTIC-SPRAYING-MACHINE
OPERATOR (plastic prod.) DPT:662**
GED: 3 SVP: 5 EC: 1 7 PA: L 4 5 7

Operates machine that sprays thermosetting resins onto conveyor to produce rigid foam material:
Sets up machine by directing workers in the loading and threading of paperboard backing onto conveyor and through coating and drying units, switching on drying lamps and fan and regulating mixture of resin and catalyst. Starts pumps and opens valves to supply pressurized compound to spray nozzles. Presses switches and turns controls to start conveyor and sprayers and adjusts controls to ensure that material is sprayed onto backing on conveyor to produce foam material of specified width, thickness and density. Cuts sample piece of solidified material and examines it to verify maintenance of production standards. Directs cut-off man to adjust saws to cut material to specified dimensions.
May spray foam into hollow panels of cooler cases and refrigerators to act as insulating medium.

8579-126 HOSE MAKER, HAND(rubber) DPT:682
GED: 3 SVP: 5 EC: 1 6 PA: M 4

Fabricates large reinforced hose by performing any combination of the following duties:
Positions and secures building sleeve on mandrel in motorized chuck, by hand. Cleans ply stock (rubberized fabric and gum rubber) with solvent and applies rubber cement. Aligns ply stock onto specified building sleeve. Starts mandrel rotating, by depressing pedal, and guides ply stock onto building sleeve to form hose. Rolls assembled hose to ensure adherence of plies, and smooths wrinkles in ply stock with hand roller. Measures hose with rule, calipers and gauges and cuts off excess rubber, using knife. Winds wire or rope between plies for reinforcement of hose. Wraps fabric around hose to maintain shape during cure cycle. Cements or clamps metal fittings to ends of hose, using hand tools. Positions hose in horizontal curing heater, using overhead crane. Sets temperature gauge and timer for specified curing cycle. Unwraps fabric strips from cured hose.
May wind rope around hose on corrugated mandrel to hold hose against contours of mandrel during cure.

8579-130 LATEX-RIBBON-MACHINE OPERATOR(rubber) DPT:684
latex-thread-machine operator.
GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Operates machine to produce and cure latex ribbon and thread used for products, such as elastic tape and garters:
Opens valve from reservoir and adjusts flow to regulate level of

coagulant in trays. Positions number of dip belts, according to gauge of finished latex ribbon or thread required, over belt spindles. Starts equipment to actuate dip belts and conveyor system. Observes belts, as they float on top of latex in tray and through coagulant, to verify cohesion of latex to dip belts. Observes separation of coagulated ribbon or thread from bottom of dip belt to conveyor carrying ribbon or thread through rinsing area and drying ovens. Inspects ribbon and thread for defects, such as holes and dried coagulant. Threads end of ribbon or thread through guides leading to curing drum. May cut, weigh and examine samples to verify adherence to specifications, using scissors, scale and gauge.

8579-134 PLASTICS FABRICATOR(air & space-craft; plastic prod.) DPT:684
GED: 3 SVP: 5 EC: 1 7 PA: M 4 7

Fabricates plastic accessories, trim and structural parts of aircraft by performing any combination of the following duties:
Cuts glass cloth to specifications, following templates or drawings, using scissors, knife or cutting machine. Impregnates cloth with plastic solution, using brush or impregnating machine. Places layers of impregnated cloth on mould. Attaches metal mounting plates to structure. Presses cloth to fit contour of mould. Slits cloth with scissors or knife to fit and lap ends. Smooths surface by hand or scraper and removes air pockets and excess plastic. Places coated mould in vacuum bag. Installs air and bleed valves in bag and connects vacuum line to valves. Opens valves to collapse bag and draw it tightly over layers of cloth. Places laminated unit in oven and adjusts thermostat to regulate specified curing cycle. Removes vacuum bag, using scissors, and pries lamination from mould, using hand tools. Smooths surface of lamination, using disk sander, and repeats wrapping operation as required to build unit to specified number of layers.
May build honeycomb laminated radomes. May build laminated radomes, using winding process, on cast iron tapered mandrel. May repair aircraft plastic parts, using heating and vacuum equipment, to cure repaired area and be designated accordingly,
Aircraft-Parts Repairman, Plastic

8579-138 RUBBER-LINING INSTALLER(rubber) DPT:684
tank liner.
GED: 3 SVP: 5 EC: 1 7 PA: M 3 4 7

Installs rubber sheeting applied to interior of tanks, valves, pipes, ducts, cells and similar articles to prevent corrosion and to minimize contamination or explosion hazards to contents:
Prepares article for application of lining by sandblasting, scraping or painting interior surfaces. Marks out pattern for rubber lining on heavy paper, from blueprints and sketches and cuts it out with scissors. Places pattern on specified rubber sheeting and cuts around it, using knife or scissors. Coats surfaces to be lined with required type of rubber cement. Bonds rubber lining to surfaces, using special tools. Steam cures rubber lining in autoclave or by using steam hose and hood. Tests installed rubber linings for conformance to specifications, using spark tester.
May repair rubber linings by cutting out damaged or worn areas and cementing in self-curing rubber patches. May visit equipment sites to install or repair rubber linings.

8579-142 FUEL-TANK FINISHER AND REPAIRER(rubber) DPT:384
GED: 3 SVP: 4 EC: 1 7 PA: M 3 4 7

Finishes and repairs rubberized fuel tanks to rigid specifications, performing any combination of the following duties:
Removes foreign material from inside of fuel tank, using wire brush, portable buffer, and vacuum hose. Cleans inner surface of tank with cloth and solvent. Examines fuel tank for defects; such as, blisters, ply separations, cracks, and loose seams. Marks location and repair code on defective area with crayon and records types of defects. Cuts away defective area with knife and smooths edges with portable buffer. Positions and cements specified patching material in defective area and rolls with hand roller to ensure adhesion. Cuts out and replaces defective fittings and rubber reinforcement strips, using hand tools. Fills blisters with rubber cement, using hypodermic needle. Clamps electric platen on repaired area to vulcanize it. Washes tank and applies lacquer to repaired areas, using roller and brushes. Positions fuel tank on jig to verify location of fittings and screw holes. Verifies thickness of fuel tank walls, using gauges. Marks identification codes on tank, using rubber stamps, stencils and spray gun.
May install additional fittings and hangers according to specifications.

8579-146 DE-ICER ASSEMBLER, PNEUMATIC(rubber) DPT:684
GED: 3 SVP: 4 EC: 1 7 PA: M 4

Assembles precut rubberized fabric and gum-rubber ply stocks to make pneumatic aircraft de-icers:
Determines location for rubber ply stock on building form, following guidelines on form or using template and blueprints. Positions ply stock, tubes, manifolds and beadwires in specified sequence on building form and secures them in place with rubber cement. Compresses assembled ply stocks with roller to remove wrinkles and promote adherence. Trims excess ply stock from assembled de-icer with knife and moves de-icer to curing area. Moves cured de-icers to work area on portable form and drapes de-icers over rack. Brushes specified coats of cement on designated areas of de-icers.
May lay out, cut out and assemble special tubes and manifolds from rubberized fabric, using rule, templates, knife, scissors and forming bar.

8579-150 FIBREGLASS LAMINATOR(electronic equip.; plastic prod.; ship & boat bldg.) DPT:684
lay-up man, fibreglass; mould laminator.
GED: 3 SVP: 4 EC: 1 7 PA: M 3 4

Builds up layers of fibreglass and resin on plastic, steel or wooden moulds to make parts for plastic products; such as, boats, automobile bodies, buoys or components for electronic equipment, performing any combination of the following duties:
Fills cracks, depressions or holes in mould surface with plastic, and smooths surface, using sandpaper. Cleans mould with water or cleansing solution and waxes and polishes surface, using sponge and cloth. Brushes or sprays parting agent on mould to facilitate removal of moulded product. Sprays mould with coloured resin to produce glossy surface on finished item. Mixes specified amounts of resin and catalyst, using mechanical mixer. Cuts fibreglass cloth to size, using pattern and shears. Covers mould with cloth and brushes on mixture or saturates cloth by dipping in mixture before placing on mould. Removes air bubbles and smooths surface, using squeegee or roller. Sprays mixture of chopped fibreglass, resin and catalyst on mould to form laminations, using specialized spraying equipment. Applies additional fibreglass and resin to obtain specified thickness or to bond preformed wooden parts, such as reinforcing strips, flotation tanks or flooring to structure. Examines moulded item, after hardening, and removes rough spots or air bubbles, using sandpaper. Repairs fibreglass products, using power tools to drill, cut out and smooth defective areas. Cuts and fits fibreglass patches and fills holes with plastic fillers. Mixes resins or plastic paint with catalyst and sprays repaired surfaces. Buffs surfaces of finished products to provide lustrous finish, using buffing compound and portable buffer.
May place article in baking oven to facilitate curing. May specialize in fabricating or repairing a particular fibreglass product and be designated accordingly; for example,
Electronic-Component Fabricator, Fibreglass(electronic equip.)
Fibreglass-Boat Repairer(ship & boat bldg.)

8579-154 FUEL-TANK BUILDER(rubber) DPT:684
GED: 3 SVP: 4 EC: 1 7 PA: H 3 4 7

Builds and cures rubberized fuel tanks, performing any combination of the following duties:
Positions cardboard or plaster building form in jig. Cuts and fits strips of uncured rubber along fluted areas of form. Marks outlines of specific shapes and dimensions on rubber sheeting, using stencils and powder. Cuts or stamps out sections, from rubber sheeting, with shears or mallet and die. Fits specified layers of synthetic and rubber sheeting on form. Smooths out wrinkles, using hands and hand roller. Applies specified number of coats of rubberized paint, between layers of wrapping, to build up tank walls to specified thickness. Locates areas for fittings on fuel tank, using templates and ruler. Cuts out locations with scissors or electric hot knife. Stamps or cuts out rubber flanges. Buffs and cleans surfaces of flanges with hand buffer and solvent. Cleans metal fitting rings or hangers in degreasing solution before bonding. Assembles rubber and metal fittings by cementing and screwing parts together. Loads assembled fittings on racks and cures in horizontal heater or cures individual fittings in pneumatic vulcanizing press. Cements fittings on fuel tank. Places rubber reinforcement strips over base of fittings and along seams of fuel tank.

Cures assembled fuel tank in horizontal heater for specified time. Applies lacquer sealant to tank, using paint roller and brushes. May build self-sealing tanks and required shock absorbers.

8579-158 ZIPPER-FORMING-MACHINE TENDER(plastic prod.) DPT:685
coil-zipper-machine tender.
GED: 3 SVP: 4 EC: I 6 PA: L 4 7

Tends battery of machines that heat and form nylon filament into spiral, for toothed portion of zippers:
Mounts reel of filament on machine spindle and threads filament through guides and tension bars into electrically heated device. Threads filament between forming dies and through cooling tube to takeup reel. Starts machine and observes filament for loose spiral or kinks, indicating variations in temperature, and adjusts rheostat knob to regulate heat. Measures filament for conformance to specified dimensions, using micrometer. Inspects samples of formed filament for number and spacing of teeth, using comparator. Notifies repairman of machine malfunction.
May tend forming machine with automatic sewing mechanism attached, that sews nylon spirals onto tapes to produce continuous lengths of nylon zipper.

8579-162 CURED-TIRE REPAIRMAN(rubber) DPT:684
GED: 3 SVP: 3 EC: I 7 PA: M 4 7

Repairs defects in rejected cured tires:
Examines and probes tire with awl to determine extent of defect. Buffs blemishes from tire, using portable buffer. Cuts out rubber around defect, using knife and buffs area to prepare it for patching. Cements uncured rubber patch into cutout to build up defective area. Rolls patch with special hand tool to remove trapped air. Buffs and trims excess patch rubber from tire. Cuts defective tread from plies and buffs ply surface. Cements new tread onto plies.
May tend vulcanizing machine to cure patch on tire.

8579-166 EXPANSION-JOINT BUILDER(rubber) DPT:684
GED: 3 SVP: 3 EC: I PA: H 4

Fabricates expansion joints for ends of rubber hose:
Applies solution of soapstone and water, or dry talc to end of hose. Forms expansion joint by cementing together specified number of layers of rubber and fabric around end of hose or on mandrel. Covers joint with nylon tape and steel curing plates, preparatory to vulcanizing. Removes excess rubber from joint after vulcanizing, using knife and portable grinder. Builds up low spots with precured rubber patches. Marks out and drills bolt holes in joint, using templates, scriber and hand drill. Paints joint, using brush.

8579-170 NEOPRENE SPRAYER(plastic prod.) DPT:684
GED: 3 SVP: 3 EC: I 7 PA: H 4

Operates equipment to spray and cure neoprene on fibreglass rovings, to produce chemically-resistant duct liners:
Examines roll of fibreglass rovings for conformance to specifications. Pours liquid neoprene into reservoir. Starts equipment and feeds rolls of fibreglass onto conveyor. Adjusts position of spray heads and speed of conveyor to minimize overspray and ensure coverage and penetration. Operates switches to activate heating units and exhaust fans, used to cure neoprene. Adjusts temperature and conveyor speed as required. Repeats coating and curing operations to obtain specified impregnation. Cleans sprayheads, using solvents.
May spray neoprene on other materials, such as steel, wood and concrete. May spray neoprene, using manually operated airless spray equipment.

8579-174 RUBBER-FOOTWEAR MAKER, HAND(rubber) DPT:684
GED: 2 SVP: 4 EC: I 7 PA: L 4 7

Fabricates rubber footwear by hand, using pre-cut and pre-cemented parts:
Mounts specified last on worktable, using hand tools. Selects pre-cut and pre-cemented parts in prescribed sequence and positions and aligns them on last, using form gauges. Assembles parts and rolls them to obtain tighter bond, using handroller. Removes excess rubber from footwear, using knife and scissors.
May record type and quantity of rubber footwear completed.

8579-178 RUBBER-FOOTWEAR REPAIRER(rubber) DPT:684
GED: 2 SVP: 4 EC: I 7 PA: L 4 7

Repairs defective rubber footwear:
Applies benzine or naphtha to loose edges of seams to restore tackiness and rolls seams to tighten bond. Smooths edges by pressing them with heated knife or hand roller. Repositions or replaces misaligned, creased or wrong parts such as bindings, toecaps, heels and outsoles. Removes bulge of outsole or heel by trimming excess rubber from insoles, using knife or scissors. Repairs cuts, pits, and blisters by cutting, cementing and filling defect with colour-matched uncured rubber. Revulcanizes repaired areas, using portable, electrically heated vulcanizer. Buffs repaired area, using emery cloth or emery wheel.
May grade repaired footwear according to type of repair and general condition. May record quantity and type of shoes repaired.

8579-182 TIRE BUILDER(rubber) DPT:684
GED: 3 SVP: 3 EC: I 5 PA: H 4

Builds pneumatic tires on rotating drum machine:
Adjusts ply-stitcher-pressure rollers and drum on machine according to width of stock, using gauges and hand tools. Rubs cement stick on drum edge to provide adhesive surface for plies. Pulls ply from machine spool and aligns with edge of drum. Starts drum revolving by depressing pedal, to wind specified length of ply onto drum. Splices ends and brushes solvent onto ply to ensure adhesion. Repeats operation as specified, alternating direction of each ply to strengthen tire. Depresses pedal to move bead setters and position rollers that press prefabricated bead onto plies and turn edge of plies under and over beads. Winds chafers and breakers onto plies. Aligns tread with guide on drum and starts drum to wind tread onto plies. Splices ends of tread and starts drum and rollers that bond tread and plies as drum revolves. Removes tire, by depressing pedal to collapse drum.
May apply additional belts of fibreglass to regular plies to build glass-belted tires. May bond tread splice of uncured tires, using hydraulic press. May build a particular type of tire and be designated accordingly; for example, Earth-Mover-Tire Builder, Passenger-Tire Builder, Truck-Tire Builder

8579-186 UNCURED-TIRE REPAIRMAN(rubber) DPT:684
green-tire repairman.
GED: 2 SVP: 4 EC: I 7 PA: M 4 7

Disassembles, repairs and rebuilds rejected uncured tires:
Removes defective tire components; such as, tread, chafing strip, plies and beads, using solvent. Repairs defects, such as wrinkles, loose beads and damaged or missing plies, using solvent, cement and hand tools. Refinishes tires to conform to specifications.

8579-190 AIRCRAFT-TIRE-TUBE BUILDER(rubber) DPT:584
GED: 2 SVP: 3 EC: I PA: L 4 7

Cuts and cements rubber stock to build aircraft tire tubes:
Places templates on calendered gum stock, traces patterns and cuts stock with scissors, holding edges at angle to obtain beveled cut. Washes edges with solvent and brushes on cement. Joins stock together to form tube by lapping and bonding edges with hand roller. Marks valve location with template. Cuts out valve hole in tube with mallet and die and cements valve in position.

8579-194 LASTER, RUBBER FOOTWEAR(rubber) DPT:684
hand laster.
GED: 2 SVP: 3 EC: I PA: L 4

Positions uppers of rubber footwear over lasts and secures uppers to insoles:
Reads work orders to determine size and quantity of footwear to be produced and selects uppers from trays or racks. Stretches and draws uncured rubber upper or cement-coated-fabric upper over last and insole, by hand. Presses upper margin against insole all around, using fingers, to ensure bonding.

8579-198 LEAD-STRIPPING-MACHINE OPERATOR(rubber; wire prod.) DPT:684
GED: 2 SVP: 3 EC: I 7 PA: H 4

Operates machine to strip lead covering from cured stock, such as rubber hose and rubber-covered cord or cable:

Bolts specified stripping fixture to machine and adjusts guides to accommodate stock, using hand tools. Positions reel of cured stock on turntable and aligns with stripping machine, using hoist. Cuts and bends back lead on end of stock, using knife. Inserts end of stock into machine and ends of lead covering between cutter rollers. Turns setscrew and wheels to adjust stripping blades. Starts machine to strip lead from stock and chop lead for return to melting pot. Observes operation of machine to ensure stripping blades do not cut into stock. Starts stripped stock onto take up reel or conveyor for removal to next process station.

8579-202 PADDED-DASHBOARD MAKER(plastic prod.) DPT:684
GED: 2 SVP: 3 EC: I 7 PA: L 4

Pours foam-padding solution into shaped skin in mould to form padded dashboards:

Waxes mould to prevent pre-shaped plastic skin from sticking to mould. Positions shaped skin in mould. Positions metal or plastic inserts in mould to locate defroster outlets, speaker grille and instrument cluster. Fills cone-shaped paper container with specified amount of padding solution. Pours solution into mould in specified pour pattern. Clamps lid over mould. Positions mould in curing oven or allows padding to cure in mould. Inspects cured product and marks defects, such as soft spots and voids, using chalk or crayon. Cleans moulds, using solvent, cloth, air hose and scraper.

8579-206 PLASTICS REPAIRMAN(plastic prod.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Repairs defects in plastic products, such as luggage, contour seating and billiard table parts, by performing any combination of the following duties:

Examines product for defects; such as, blisters, cracks, broken joints and improper fitting. Grinds defects to smooth surface and form base for bonding compound, using power grinder. Fills cracks and ground-out areas with bonding compound. Cements broken joints. Removes excess bonding compound with sandpaper or rag dipped in solvent. Patches tears, using electric heat gun. Paints repaired patch to match original colour, using brush or spray.

May adjust defective luggage, using riveter and hand tools. May salvage parts from unrepairable luggage, using hand tools.

8579-210 TIRE REPAIRMAN(motor trans.) DPT:684
GED: 2 SVP: 3 EC: I PA: M 3 4

Repairs punctured tires of automobiles, buses, trucks and other vehicles by either of the following methods:

1. Locates puncture in tubeless tire by visual inspection or by immersing inflated tire in water bath and observing air bubbles. Separates tire from rim, using mechanical tire changer. Buffs damaged area, using scraper and power buffer. Inserts adhesive mixture into puncture. Seals puncture with rubber plug, using plug insertion tool. Reassembles tire onto rim, using mechanical tire changer. 2. Separates tubed tire from rim, using hand tools and mechanical tire changer. Removes inner tube from tire and inspects tire casing for defects, such as holes and cuts. Cements tire patch over rupture in casing. Inflates inner tube and immerses it in water to locate leak. Buffs defective area, using scraper and power buffer. Patches tube with adhesive rubber patch or seals rubber patch to tube, using hot vulcanizing plate. Reassembles tire onto rim, using hand tools and mechanical tire changer.

May remove and remount vehicle wheels.

8579-214 AIR-BAG BUILDER(rubber) DPT:684
GED: 2 SVP: 3 EC: I PA: M 4

Assembles rubber-ply stock on metal pole to build air-bags, used in curing tires:

Measures and cuts ply stock on table, using marker and shears. Dusts ply stock with soapstone to prevent sticking to pole. Positions pole on table brackets. Winds and cements layers of ply onto pole to build up bag to specified thickness. Measures and skives ends of base stock

(tubed rubber), using marker and knife. Measures and cuts step-offs on ends of assembled plies to provide smooth splice. Brushes solvent on base stock and positions it on assembled plies. Rolls plies and base stock to ensure adherence and remove air pockets, using hand tools. Drills hole and cuts out flap in air bag to facilitate valve insertion, using drill press and knife. Removes pole from assembled air bag. Inserts and positions valve. Brushes cement over valve area and replaces rubber flap. Attaches fittings to valve, using hand tools. Brushes solvent on ends of air bag and splices ends together. Wraps rubberized reinforcing strips around air bag splice. May build air bags from tubed rubber stock only.

8579-216 CENTRIFUGAL CASTER(chem., n.e.c.; plastic prod.) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends centrifugal casting machine to produce plastic sheets:

Mixes specified quantities of liquid resin, pigment and catalyst, using mixing machine, to produce resinous plastic compound of desired quality and colour. Presses switch to rotate open-ended cylindrical casting drum. Sprays interior of drum with release agent, such as wax. Pours resinous compound into rotating drum and sprays surface of compound with hardening agent to produce plastic sheeting. Stops rotation of drum after specified time. Removes plastic sheeting from forming drum, manually or using roller device. Cuts plastic to form flat sheet and places sheet on curing rack or in water tank to harden.

8579-218 TIRE BUFFER(rubber) DPT:685
GED: 2 SVP: 3 EC: I 5 7 PA: H 4 7

Tends buffing machine that removes rubber from tire body to prepare tire for retreading:

Inspects tires and rejects those with damaged casings. Lifts tire manually or by hoist and positions it on buffing machine holder. Bolts required template against tire to indicate total depth of tread removed, using wrench. Starts machine to rotate tire and moves tire against buffing wheel. Adjusts machine buffing arm against template to obtain specified depth of cut. Sets automatic travelling device to remove tread across width of tire. Measures buffed tire to determine size of retreading mould, using tape measure. Records information on work order.

8579-222 BEAD FINISHER(rubber) DPT:684
GED: 2 SVP: 2 EC: I 5 PA: L 4

Operates machine to reinforce and build up formed tire beads with uncured rubber or rubberized fabric:

Adjusts machine rollers and guides, using wrenches. Trims edges of bead covering fabric, using shears or knife. Positions bead on guide wheels of bead building machine and sets roller clamps to hold bead. Starts machine and manually guides stock (uncured rubber or rubberized fabric) from roll onto bead as bead rotates. Cuts stock with scissors, and presses ends against bead with fingers. Tags and ties specified quantities and types of beads into bundles.

May cover V-belts with rubberized fabric and be designated accordingly.
V-Belt Coverer

8579-226 BED LASTER(rubber) DPT:684
GED: 2 SVP: 2 EC: I 5 PA: L 4

Operates bed-lasting machine that bonds toe and heel of lasted-rubber-footwear upper onto insole:

Adjusts plates of machine to accommodate footwear size, by turning knobs and wheel. Places article of footwear, such as fabric top boot or sneaker, onto metal last and positions last on ram of bed-lasting machine. Pulls sufficient margin of upper material over insole to make firm bond, using pincers. Bonds margin of upper onto insole, by pulling handles to move plates over heel and toe and depressing pedal to raise ram and article against plates. Repeats operation to achieve complete bonding.

8579-230 DE-ICER-KIT PREPARER(rubber) DPT:684
GED: 2 SVP: 2 EC: I PA: M 4

Prepares assembly kits for use in making pneumatic de-icers for airplanes:

Threads specified bead wire into holding device. Wraps wire manually with rubberized fabric tape. Cuts bead wire to specified length, using

pliers. Cuts rubber plies to specified length, using knife and verifies thickness, using snap gauge. Selects moulded rubber parts and other specified items; such as, punches, dies, blueprints, templates and gum stock. Places selected items in kit box with bead wire and plies. Weighs and tags packed kit box. Collects used de-icer assembly kits from production areas and salvages reusable material.

8579-234 FOAM-CUSHION REPAIRER(plastic prod.; rubber) DPT:684
GED: 2 SVP: 2 EC: I 7 PA: L 4

Repairs defects in plastic or foam rubber cushions:
Cuts out defective area of cushion and forms piece of repair material to comparable size and shape, using knife, saw, shears or clicking machine. Brushes adhesive on repair piece and hand fits it to cut-out to ensure proper adhesion. Applies fabric tape or netting to underside of repair area for reinforcement. Smooths and shapes repaired areas to contour of cushion, using air powered hand buffer. Repairs splits or tears, using brush and adhesive.
May apply fabric tape, netting and support insulators to automotive cushions and be designated accordingly,
Foam-Cushion Reinforcer

8579-238 HOSE CURER, OPEN STEAM(rubber) DPT:684
GED: 2 SVP: 2 EC: I 5 PA: M 4 7

Cures industrial hose, using open steam method:
Fills hose with water and seals ends with connector caps, using wrenches. Moves hose to curing area and positions it in curing unit, using overhead crane. Opens steam valves and sets timer for curing cycle. Removes connector caps and blows water from hose, using air pressure. Pressure tests cured hose to specifications, using air or water pressure pump.

8579-242 MOULD CLEANER(rubber) DPT:684
GED: 2 SVP: 2 EC: I 5 7 PA: H 3 4

Cleans, stores and distributes moulds, used to form rubber or plastic products, by performing any combination of the following duties:
Positions mould on worktable manually or using hoist. Sprays mould with steam or solvent to remove protective oil. Heats mould on electric plate or by immersing it in hot cleaning fluid to loosen adhering particles. Cleans mould, using buffing wheel or wire brush and scraper. Inspects moulds for defects and to ensure surfaces are smooth and clean. Sprays or brushes oil on mould to prevent corrosion during storage. Selects and distributes moulds according to work orders.
May use acetylene torch or abrasive blast to remove imbedded material in mould.

8579-246 NET APPLICATOR(plastic prod.) DPT:684
GED: 2 SVP: 2 EC: I 5 7 PA: L 4

Applies fabric tape or netting in specified locations on moulds, to reinforce plastic foam automotive cushions, by performing any combination of the following duties:
Cuts tape or netting to specified size, using hand cutter and shears. Heats wax in melting pot, using portable heater. Dries mould with rags. Applies tape or netting to specified locations on mould and secures with wax or holding pins. Positions pour head over mould and observes automatic pouring operation. Depresses button to stop pouring operation when necessary.
May position metal inserts in mould to form high back seats.

8579-250 RUBBER-FOOTWEAR MOUNTER(plastic prod.; rubber) DPT:684
desma laster; hooker-laster; puller laster.
GED: 2 SVP: 2 EC: I PA: L 4

Produces fabric top shoes with moulded rubber or plastic soles by performing any combination of the following duties:
Moves lever to turn last to sole-up position. Brushes last with lubricant to prevent sticking. Pulls fabric top over last, and draws string in hem around upper edge so that heel is centered and upper fabric is aligned evenly around sole of last. Pulls string in hem tight around sole of last and ties knot. Pulls and stretches fabric upper and hooks hemmed edge over pins protruding from instep and heel of last, using claw-tipped lasting tool. Smooths puckered fabric at toe and heel and cuts ends from draw string. Positions precut outsole in cavity of mould.

Pulls lever to invert last. Starts machine that lowers lasted upper into die cavity and vulcanizes outsole to upper. Removes shoe from mould and last when vulcanizing cycle ends. Strips excess moulded material from shoe, by hand.
May vulcanize moulded outsoles to leather uppers. May operate machine that automatically injects rubber or plastic into mould to form sole.

8579-254 RUBBER-GOODS REPAIRMAN(rubber) DPT:684
GED: 2 SVP: 2 EC: I 7 PA: M 4

Repairs defects; such as, cuts, breaks, wrinkles and thin spots in rubber goods:
Cuts out defective area with shears, and buffs cut edge with abrasive paper. Cleans defective area with solvent, and brushes on cement. Applies uncured gum patch and bonds with hand roller. Dusts defective area with soapstone to prevent sticking while curing patch. Spot cures rubber patch, using air ram press (hot plate). Smooths repaired areas, using hand-buffing machine.
May cure repairs, using autoclave. May replace defective valves or fittings. May be designated according to type of rubber goods repaired; for example,
Air-Bag Repairman
Inner-Tube Repairman
Life-Raft Repairman

8579-258 SOLID-TIRE BUILDER(rubber) DPT:684
GED: 2 SVP: 2 EC: I 7 PA: H 4

Fabricates solid rubber tires used on industrial trucks:
Bevels ends of uncured rubber tread, using beveling machine. Weighs beveled tread and cuts off or cements on pieces, to bring tread within allowable weight tolerance. Positions pre-painted and pre-cemented steel rim band under pressure rollers of tread-binding machine. Starts machine and feeds specified number of layers of tread onto band.
May pre-paint steel rim bands with priming solution. May apply rubber cement to steel rim band.

8579-262 LINER-REROLL MAN(rubber) DPT:585
wrapper rewinder.
GED: 2 SVP: 2 EC: I PA: H 4

Tends machine to clean, smooth, and reroll fabric liners for use in winding calendered rubber or fabric:
Positions liner roll in let-off bracket, by hand or using hoist. Threads liner under yardage gauge and onto powered windup spindle. Turns valve on vacuum fixture to remove dust from liner. Starts machine and guides liner through rollers to ensure evenness of liner and removal of wrinkles. Examines liner for adhering rubber particles and torn areas. Scrapes rubber particles from liner with hand tool. Weighs and records length and weight of roll on roll tag.
May repair damaged areas of liner or sew additional fabric on liner to extend length, using portable sewing machine.

8579-266 ATOMIZER-CAP-MACHINE TENDER(plastic prod.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that assembles dip tubes and plugs used in plastic squeeze bottles:
Places reel of plastic tubing onto spindle. Feeds tubing through retaining wheels and channel to edge of blade. Fills bowl on machine with plugs. Pushes button to start machine that assembles tubes and plugs, and ejects assemblies into tote box. Adjusts machine to correct faulty operation. Replaces dull and unusable blades, using hand tools. Inserts sample dip tube into water filled plastic bottle and tests it for defects.

8579-270 BACK-STRIP-MACHINE TENDER(rubber) DPT:685
slitter.
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that rolls strips of self-adhesive tape onto continuous sheeting of uncured-rubber stock and cuts into specified widths and lengths to form backseam-reinforcing strips for rubber footwear:
Selects rubber stock of specified colour and thickness. Mounts parallel rolls of tape in individual holders and roll of sheeting on machine

frame, using hoist. Installs reel in cradle for winding sheeting wrapper. Threads sheeting and tape around rollers that guide and press them together. Fastens end of wrapper to reel for rewinding. Starts machine, rewinding motor and conveyor that pulls assembly under rotary gang knives and guillotine to slit sheets into strips and cut strips to length. Removes strips from conveyor and places them between cloth leaves to form book. Examines strips and discards those that are reversed and wrinkled.

8579-274 BALLOON LEACHER AND CURER(rubber) DPT:685

GED: 2 SVP: 2 EC: 1 PA: M 4

Tends equipment to leach and cure balloons:
Lifts latex-dipped form boards from wheeled rack and stacks them on rack suspended above leaching tank. Lowers rack into leaching solution for specified time, using hand winch. Replaces leached form boards on wheeled rack and pushes it into oven. Secures door with locking handle and sets oven timer for specified curing cycle. Observes oven temperature indicator and adjusts controls as required.

8579-278 CHAFER BUILDER(rubber) DPT:685

GED: 2 SVP: 2 EC: 1 PA: M 4

Tends machine that cuts and winds rubberized fabric strips into chafers, used to prevent tire beads from rubbing against tire rim:
Threads rubberized fabric through machine guides, cutter blades and tension rollers onto liner roll at windup rack. Adjusts guides, by turning set screws, to place cut strip in alignment with previously wound strip. Starts machine and observes operation to ensure width uniformity and alignment of strips. Lifts completed roll of chafers from windup rack and attaches identification tag.

8579-282 GOLF-BALL-COVER TREATER(sport. & toy) DPT:685

GED: 2 SVP: 2 EC: 1 7 PA: M 4

Tends machines and equipment that vulcanize, etch and cure golf ball covers preparatory to painting:
Pours specified amounts of chemicals and water into dip tanks. Fills dip buckets with golf balls and moves buckets through series of dip tanks, using hoist. Empties balls into boxes and moves boxes to curing room for specified time. Loads tumbler with golf balls. Opens valves to fill tumbler with water and pumps in specified amounts and types of chemicals. Tumbles balls for specified time. Empties solution and runs tumbler through rinse cycle. Repeats chemical treating and rinse cycles as specified. Moves golf balls in buckets to drying room.

8579-286 HOSE CUTTER AND BRANDER, MACHINE(rubber) DPT:685

GED: 2 SVP: 2 EC: 1 PA: M 3 4

Tends automatic cutting and branding machines that cut various types of hose to specified lengths and print brand name on hose:
Feeds cured rubber hose into machine that automatically cuts hose to specified lengths. Coils cut hose as it emerges from machine and lifts it onto skid. Bolts specified printing plate on machine fixture. Adjusts guides and feed rollers to accommodate hose, using wrench. Fills feed tank with specified colour of ink and starts machine. Lifts hose to table manually or with hoist and starts hose into feed rollers. Examines hose to ensure that printing meets specifications. Attaches coupling hardware to hose. Packages hose to specifications and places on skids for removal to warehouse.
May cut hose, using mitre box and knife.

8579-290 TIRE-BAGGING-MACHINE TENDER(rubber) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: H 3 4

Tends tire-bagging machine that inserts air bags into tires prior to curing process:
Hangs air bag on ram hook of tire-bagging machine and couples air hose to air bag valve. Lifts tire onto machine table, by hand or with hoist, and positions it under ram. Starts machine that inserts and inflates air bag in tire.
May move bagged tires to curing presses, using handtruck.

8579-294 HOSE-COUPLING ASSEMBLER(plastic prod.; rubber) DPT:687

GED: 2 SVP: 2 EC: 1 PA: L 4

Attaches metal couplings to rubber or plastic hoses:
Cuts hose to specified lengths, using mitre box and knife. Attaches expansion shaft to pneumatic expander device, using hand tools, and positions specified expansion ring on expansion shaft. Slides coupling on end of hose and hose assembly over expansion shaft. Operates expander to spread expansion ring and lock coupling to hose.
May attach metal couplings to vacuum cleaner hose. May bolt coupling hardware to hose, using wrench.

8579-298 INNER-TUBE INSERTER(rubber) DPT:687

GED: 2 SVP: 2 EC: 1 7 PA: H 4

Installs inner tubes and flaps in truck tires preparatory to shipping:
Positions tire under hydraulic spreader clamps. Presses button to activate clamps that spread sidewall of tire. Inserts inner tube in tire manually, with valve located at specified position. Inflates inner tube, using airhose. Inserts flap over inner tube to prevent damage.

8579-302 PREPARATION MAN, LEAD PRESS(rubber) DPT:687

GED: 2 SVP: 2 EC: 1 PA: M 3 4

Prepares uncured rubber hose for covering:
Inspects hose for defects such as cracks, cuts or blisters. Cuts out defective sections and joins hose ends, using metal connectors. Measures inside and outside diameters of hose to ensure conformance to specifications, using tape measure and calipers. Fits couplings on hose ends to join short lengths, using hand tools. Vents hose to specified depth, using awl. Coils hose on large pan or rotating circular table.

8579-399 OTHER FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS

This group includes other rubber and plastic products fabricating, assembling and repairing workers, not elsewhere classified; for example, those who dust inner tubes prior to curing, fit and repair plastic safety glasses and goggles, remove urethane foam cushions from conveyORIZED moulds, assemble inner and outer shells of cooler cases, heat and hand bend rubber or plastic smoking pipe bits to shape, replace missing colour chips on floor covering and assemble plastic components of film developing and processing machines. Typical examples of occupational titles covered by this residual group definition are:
Bit Bender(rubber)
Cooler-Shell Assembler(plastic prod.)
Safety-Goggle Repairman(plastic prod.)
Tube-Splice Duster(rubber)

858-MECHANICS AND REPAIRMEN, N.E.C.

This minor group includes occupations, not elsewhere classified, concerned with repairing, adjusting, servicing and installing machines or equipment primarily of a mechanical nature; such as, motor vehicles, trailers, aircraft, railway rolling stock, farm and construction machinery, industrial and production machines, business machines, precision instruments and watches. A knowledge of a specific machine or product is normally required. Electrical repairing occupations are classified in Minor Group 853 - FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS, ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT. Occupations

concerned with installing and repairing marine engines are classified in Unit Group 8592 - MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS. MECHANICS AND REPAIRMEN, N.E.C. are classified in the following unit groups:

- 8580** Foremen: Mechanics and Repairmen, n.e.c.
- 8581** Motor-Vehicle Mechanics and Repairmen
- 8582** Aircraft Mechanics and Repairmen
- 8583** Rail Transport Equipment Mechanics and Repairmen
- 8584** Industrial, Farm and Construction Machinery Mechanics and Repairmen
- 8585** Business and Commercial Machine Mechanics and Repairmen
- 8586** Inspecting and Testing Occupations, Equipment Repair, n.e.c.
- 8587** Watch and Clock Repairmen
- 8588** Precision-Instrument Mechanics and Repairmen
- 8589** Other Mechanics and Repairmen, n.e.c.

8580-FOREMEN: MECHANICS AND REPAIRMEN, N.E.C.

This unit group includes occupations as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating the activities of workers engaged in repairing mechanical equipment; such as, motor vehicles, aircraft, rail-transport equipment, industrial, farm and construction machinery, business and commercial machines, precision instruments, and watches and clocks.

8580-110 FOREMAN: AIRCRAFT MECHANICS AND REPAIRMEN(air & space-craft) DPT:138

Supervises and co-ordinates activities of workers engaged in repairing aircraft, airframe components and related equipment, (Unit Group 8582):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in repairing a particular type of aircraft, equipment or phase of repair and be designated accordingly; for example,
Foreman, Aircraft Servicing
Foreman, Helicopter Maintenance
Foreman, Hydraulic Shop

8580-114 FOREMAN: INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN(mech. equip., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in repairing, adjusting, installing and servicing mechanical equipment; such as, tractors, combines, bulldozers, production machinery and engines, (Unit Group 8584):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular phase or type of mechanical equipment repair and be designated accordingly; for example,
Fuel-System-Maintenance Foreman
Maintenance-Mechanic Foreman, Production Machinery
Millwright Foreman

8580-118 FOREMAN: MECHANICAL-EQUIPMENT-REPAIR INSPECTORS(mech. equip., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in inspecting and testing work, concerned with quality control of mechanical equipment repair, (Unit Group 8586):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular quality control activity and be designated accordingly; for example,
Automotive-Test-Shop Supervisor

8580-122 FOREMAN: MOTOR VEHICLE MECHANICS AND REPAIRMEN(motor vehicle) DPT:138

Supervises and co-ordinates activities of workers engaged in repairing automotive vehicles, such as automobiles, trucks and buses, (Unit Group 8581):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in a particular repairing and servicing activity and be designated accordingly; for example,
Body-Shop Foreman
Engine-Repair Foreman
Garage Foreman

8580-126 FOREMAN: OFFICE-MACHINE REPAIRMEN(misc. prod. fab., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in repairing business and commercial machines; such as, calculating, bookkeeping, addressing and duplicating machines and typewriters, (Unit Group 8585):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).
May supervise workers engaged in repairing a particular machine and be designated accordingly.

8580-130 FOREMAN: PRECISION INSTRUMENT MECHANICS AND REPAIRMEN(scient. & ind. equip., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in installing, adjusting, altering, calibrating or repairing scientific, engineering, optical, photographic or medical instruments and apparatus, (Unit Group 8588):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in repairing a particular instrument and be designated accordingly; for example, Meter-Shop Foreman

8580-134 FOREMAN: RAIL TRANSPORT EQUIPMENT REPAIRMEN(rail. rolling stock) DPT:138

Supervises and co-ordinates activities of workers engaged in repairing railway-rolling stock and related equipment, (Unit Group 8583):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in disassembling, servicing and repairing a particular part or type of railway equipment and be designated accordingly; for example,

Carman Foreman
Foreman, Wheel Shop
Roundhouse Foreman

8580-138 FOREMAN: WATCH AND CLOCK REPAIRMEN(scient. & ind. equip., n.e.c.) DPT:138

Supervises and co-ordinates activities of workers engaged in repairing watches and clocks and mechanical movements used in clockwork-operated devices and related equipment, (Unit Group 8587):

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in repairing particular types of equipment, such as timers, meters and recorders, and be designated accordingly.

8580-199 OTHER FOREMEN: MECHANICS AND REPAIRMEN

This group includes foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in repairing and servicing miscellaneous mechanical equipment; such as, small domestic gasoline-powered-lawn mowers, snow blowers, chain saws, and portable generators and pumps. A typical example of an occupational title covered by this residual group definition is:

Pump-Serviceman Foreman(mech. equip., n.e.c.)

8581-MOTOR-VEHICLE MECHANICS AND REPAIRMEN

This unit group includes occupations concerned with repairing and servicing gasoline-or diesel-powered-motor vehicles; such as, automobiles, trucks, buses, motorcycles, snowmobiles, hovercraft, and industrial and farm tractors. Activities include: testing, diagnosing, disassembling, replacing parts and assemblies; tuning, adjusting or making body repairs, using common and special hand and power tools, machines and equipment.

8581-110 MOTOR-VEHICLE MECHANIC(motor vehicle) DPT:261
automobile repairman; automobile mechanic.
GED: 4 SVP: 7 EC: 1 5 7 PA: M 3 4 5 6 7

Repairs and overhauls automobiles, buses, trucks and other automotive vehicles:

Examines vehicle and discusses with operator or foreman the nature and extent of malfunctions or repairs required. Plans work procedures, using manufacturers' charts, technical manuals and experience. Locates malfunctions, using test equipment, such as timing lights, electrical meters and analyzers, and adjusts to specification. Raises

vehicle, using hydraulic jack or hoist to gain access to mechanical assemblies bolted to underside of vehicle. Removes assemblies, such as engine, transmission or differential, using hand tools and hoists. Dismantles faulty assembly, and visually inspects, and checks parts, such as valves, rods, pistons, gears and bearings, using tools, such as micrometers, calipers and gauges. Repairs or replaces parts of these assemblies, and reassembles, adjusts and tests them prior to reinstalling on vehicle, using hand tools. Overhauls or replaces ancillary equipment, such as carburetors, generators, distributors, starters and pumps. Relines and adjusts brakes, aligns front ends, replaces shock absorbers and balances wheels. Solders leaks in radiators, and replaces radiator hoses. Replaces and adjusts headlights, panel, rear and running lights. Installs accessories, such as radios, heaters, mirrors and windshield wipers. Rewires ignition systems, lights and instrument panels.

8581-114 ENGINE REPAIRMAN(motor vehicle) DPT:281
GED: 4 SVP: 7 EC: 1 5 6 PA: H 3 4 6 7

Repairs and overhauls gasoline and diesel-powered engines, such as those used in automotive vehicles and hovercraft:

Positions and bolts engine to test stand. Tests engine to determine malfunctions, using instruments, such as vacuum gauge, and compression gauge. Disassembles engine and cleans parts, such as cylinder heads, pistons, ring grooves, and cylinder sleeves, using cleaning solvent, sand-blasting equipment, grinders and wire brushes. Operates lathes, grinders, and boring and honing machines to rebore and hone cylinders, and turn and undercut armatures according to chart tolerances. Repairs or replaces and adjusts parts, such as valves, valve guides and tappets, using valve-grinding machine and hand tools. Assembles and starts engine, and adjusts carburetor and distributor to ensure optimum performance. Records motor number and repairs made.

May compute customer's bill, detailing parts and labour charges, and collect payment. May be designated according to type of engine repaired; for example,

Diesel-Engine Repairman
Gasoline-Engine Repairman
Hovercraft-Engine Repairman

8581-118 INDUSTRIAL-TRUCK MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: 1 5 PA: H 3 4 7

Repairs and maintains gasoline-powered or electrical-industrial trucks, used to lift and transport materials:

Observes and listens to truck in operation to determine malfunction. Installs new ignition systems, aligns front wheels, changes or adjusts brakes, changes or recharges batteries, and replaces transmissions and other parts, using hand tools. Overhauls engines, using mechanic's hand tools, welding equipment, hoists, charts and reference manuals. Examines, adjusts and repairs lifting devices and associated drive mechanisms. Examines protective guards, and other safety devices on trucks, and adjusts them as required, using hand tools. Lubricates moving parts, and operates repaired truck to verify conformance to specifications.

8581-122 TRANSMISSION MECHANIC(motor vehicle) DPT:281
GED: 4 SVP: 7 EC: 1 PA: H 3 4 7

Repairs manual and automatic transmissions for automobiles, buses, trucks, and other automotive vehicles:

Inspects vehicle and analyses faults to ascertain extent and location of defects, and plans work sequence. Raises vehicle, using hydraulic hoist, and removes transmission, using mechanic's hand tools and hydraulic lifting device to lower transmission. Disassembles transmission unit and measures parts for wear, using micrometer and calipers. Replaces broken or worn parts, such as bands, gears, seals, and valves. Adjusts pumps, bands, and gears to precise tolerances, as indicated in manufacturers' specifications, using wrenches. Installs repaired transmission in vehicle, and fills it with transmission oil. Adjusts operating linkage and road-tests vehicle to ensure correct operation. Verifies idle speed of motor, using equipment, such as tachometer, and adjusts carburetors, when they affect the operation of automatic transmission. May specialize in repair of automatic transmissions and be designated accordingly; for example, Automatic-Transmission Mechanic

8581-126 TROLLEY-COACH MECHANIC(motor vehicle) DPT:281

GED: 4 SVP: 7 EC: I 5 7 PA: M 3 4 7

Repairs and maintains electrical and mechanical units and accessories of electrically-powered-transit coaches according to specifications: Determines malfunctions and repairs to be made through periodic inspections, road tests, or from drivers' reports. Inspects, replaces, and repairs specified mechanical and electrical units, such as generators, auxiliary motors, air compressors, regulators, brake systems, doors and door motors. Replaces worn brake shoes and linings and worn or damaged seats. Performs emergency road repairs, and drives wrecker truck to tow disabled vehicle. May perform duties of 8583-110 STREETCAR AND SUBWAY-CAR MECHANIC (rail. rolling stock).

8581-130 SHOP ESTIMATOR(motor vehicle) DPT:287 damage-repair estimator.

GED: 4 SVP: 7 EC: I PA: L 4 7

Estimates cost of repairing damaged automobile and truck bodies, by visual examination of vehicle and utilizing knowledge of replacement parts and labour costs: Examines damaged vehicles for dents, scratches, broken glass and other items requiring repair, replacement or repainting. Sights along fenders, doors and roof to detect possible frame damage, or positions vehicle in frame-aligning rig that indicates location and extent of misalignment. Examines interior of vehicle for evidence of fire or water damage to upholstery and other parts. Determines feasibility of repair or replacement of parts, such as bumpers, fenders, and doors, according to comparative costs and extent of damage. Computes cost of restoring vehicle to condition specified by customer, using parts-cost manual and labour rates. Enters itemized estimate on work order or estimate form and explains estimate to customer or insurance adjuster. May estimate cost of mechanical, electrical, or other repairs where shop performs both body work and mechanical servicing of vehicles. May estimate cost of repainting, customizing or converting vehicles to special purposes.

8581-134 TUNE-UP MAN(motor vehicle) DPT:281 automobile-service mechanic.

GED: 4 SVP: 6 EC: I 7 PA: M 3 4 7

Tunes automotive vehicle engines to ensure efficient operation: Inspects vehicle for performance and diagnoses poor performance. Uses analyzer to check valves, ignition and fuel systems. Makes separate tests on engine compression, timing and fuel pump pressure. Removes spark plugs, using socket wrench, and tests them, using spark-plug tester. Cleans electrodes in sandblasting machine, sets spark gap with feeler gauge, and replaces plugs. Inspects distributor-breaker points for wear and pitting, and replaces or resets points, using screwdriver and feeler gauge. Checks ignition timing, using test equipment, such as timing light and dwell meter, and adjusts timing to specifications, using hand tools. Adjusts carburetor-needle setting, using screwdriver, and verifies adjustment, using precision-measuring instruments. Sets valve tappets, using feeler gauge or dial indicator. Removes, cleans, adjusts or replaces defective coils, electrical connectors, carburetors, condensers, generator, fuel and water pumps, and voltage regulator. Examines battery and connections. Removes and services heat-riser valve and positive-crank-case-ventilation valve, using hand tools, solvents and lubricants. Adjusts or replaces fan belt. May tune engine while vehicle runs on rollers connected to dynamometer.

8581-138 MECHANICAL-UNIT REPAIRMAN(motor vehicle) DPT:381

GED: 4 SVP: 6 EC: I PA: M 3 4 7

Repairs, tests, and installs various types of mechanical units, such as fuel and water pumps, control valves, governors, distributors, and windshield wiper motors on trackless trolleys and buses: Reads work order or examines vehicle to diagnose faults. Disconnects and removes faulty units from vehicle, using hand tools. Disassembles unit and cleans components with solvents. Examines parts for damage and wear. Repairs, replaces, or adjusts components, such as needles, springs, bolts, relays, and air lines. Tests air lines for leaks, using air-pressure gauge. Tests hydraulic, pneumatic or electro- magnetic control valves, and door-opening and closing mechanisms. Examines

radiator shutters, and other mechanical units, and adjusts for correct operation. Reassembles and installs repaired units in vehicle.

8581-140 TRUCK-TRAILER REPAIRMAN(motor vehicle) DPT:381

trailer mechanic.

GED: 4 SVP: 6 EC: I PA: M 2 3 4 7

Repairs used commercial truck trailers, and installs parts and accessories on new trailers:

Examines and dismantles or removes wheels, bearings, lights, and air and electric brake assemblies of trailers. Replaces or repairs worn and defective parts. Test-operates repaired equipment to ensure satisfactory performance. Overhauls used and wrecked trailer bodies, following shop orders or specifications. Lays out, fits, drills, screws, rivets, and welds new metal sections to other trailer sections, using hand and pneumatic tools, and welding equipment. Installs metal or wood flooring, using hand tools. May install, adjust, and service motor-cooling systems in refrigerated trailers.

8581-142 BODY REPAIRMAN(motor vehicle) DPT:461 body-and-fender man.

GED: 3 SVP: 7 EC: I 5 6 7 PA: M 3 4 7

Repairs damaged body parts and interior finishings of automotive vehicles:

Examines damaged vehicles and estimates cost of repairs. Removes upholstery and accessories to gain access to damaged areas. Places metal block against surface of dented area and pounds opposite surface with hammer to remove dents. Fills depressions with solder or plastic filler. Removes excessively damaged fenders, panels, and grills, using wrenches and cutting torch, and attaches replacements by bolting or welding them in position. Straightens bent frames, using hydraulic jack and pulling device. Files, grinds, and sands repaired surfaces, using power and hand tools. Paints repaired surface with primer coat, and sands surface smooth with abrasives. Inspects, cleans, and repairs interior furnishings, such as floor coverings, seats, and upholstery. Replaces windshields and window glass. May adjust headlights, align wheels and bleed hydraulic brake systems. May spray paint surfaces after performing body repairs.

8581-146 AUTOMOTIVE-AIR-CONDITIONING MECHANIC(motor vehicle) DPT:281

GED: 3 SVP: 6 EC: I PA: M 3 4 7

Installs and repairs automotive-air-conditioning units:

Bolts compressor to engine block, and installs drive pulley on front end of crankshaft. Places fan belt on pulleys, adjusts tension, and tightens bolts. Bolts evaporator unit under dashboard, in trunk or in rear-engine compartment. Passes hoses through panel holes, and connects hoses to compressor, evaporator, and cool-air outlet. Removes foreign matter and moisture from system, and tests for leaks, using high-vacuum pump. Fills compressor with refrigerant and starts unit. Measures compressor pressure to determine efficiency, using gauge. Listens to unit operating to detect malfunctions. Removes faulty units from vehicles, disassembles them, and replaces worn or broken parts. Installs and connects electrical wiring to unit, power source and controls.

8581-150 CARBURETOR REPAIRMAN(motor vehicle) DPT:281

GED: 3 SVP: 6 EC: I PA: L 4 7

Repairs carburetors and gasoline-filter units:

Tests engine performance to determine cause of faulty fuel system. Disassembles carburetor as necessary and examines parts for defects. Tests valves with wire gauges and flowmeter. Cleans parts in solvents, and uses air hose, to remove dirt and gum deposits. Repairs or replaces defective parts. Reassembles carburetor and gasoline filter, and installs them in vehicle. Starts engine and turns adjustment screws to regulate flow of air and gasoline through carburetor, using screwdriver. May operate drill press, lathe, and other power tools to retap jets, ream throttle bodies and chokes, and machine-seating surfaces of carburetor housings.

8581-154 FRONT-END MAN(motor vehicle) DPT:281
alignment man; wheel aligner.
GED: 3 SVP: 6 EC: 1 PA: M 3 4 7

Aligns wheels, axles, torsion bars and steering mechanisms of automotive vehicles:

Drives vehicle onto wheel-alignment rack, and tests steering geometry of vehicle for faulty camber, caster and toe-in of front-end to determine bent axle, worn ball joints and bent steering rods, using alignment-testing machine. Straightens axle and steering rods and adjusts shims, tie rods, and joining-pins to align wheels, or installs new ball joints, pins and bushings, using hand tools. Balances wheels by placing wheel on balancing machine to determine where counterweights must be added. Hammers counterweights onto rim of wheel.

8581-158 MOTORCYCLE REPAIRMAN(motor vehicle) DPT:281
GED: 3 SVP: 6 EC: 1 5 PA: M 3 4 7

Repairs and overhauls motorcycles and similar vehicles, using hand and power tools, cutting and welding equipment, and manufacturers' manuals:

Examines cycle for damage with customer to determine nature and extent of malfunction and damage. Listens to engine for defective operation. Measures generator output, ignition timing, and other vehicle-performance indicators, using test equipment, and repairs or replaces parts as necessary. Dismantles engine to gain access to defective parts, and removes, repairs and replaces parts, such as cylinder heads, pistons, valves and rings. Cleans, adjusts and repairs carburetors. Repairs or replaces other vehicle parts, such as headlights, horn, gasoline and oil tanks, starter and muffler. Repairs and adjusts clutch, brakes and drive chain. Hammers out dents, straightens frame, and welds broken parts. Repairs, balances, and aligns wheels. May road test repaired motorcycles.

8581-162 NEW-CAR SERVICEMAN(motor vehicle) DPT:381
new-car-get-ready man.
GED: 3 SVP: 6 EC: B PA: M 3 4 7

Serves new automobiles on delivery to dealer, and makes minor repairs or adjustments to place vehicle in saleable condition:

Inspects vehicle for obvious damage and missing major components, and records discrepancies on acceptance slip. Inspects vehicle for loose or misaligned trim, doors, hardware, and other items, and corrects defects, using hand tools. Starts engine and activates power equipment, such as electric windows, radio, lights, cigarette lighter and other electrical components to detect faulty units or systems. Observes minor chips or scratches in paint and touches up imperfections, using brush or spray applicator and matching paint. Installs optional equipment specified by customer or dealer, such as remote control mirrors, rugs and snow tires. Installs standard components, such as hub caps and wiper blades. Adds antifreeze solution and tops up fuel, oil and water levels. Polishes car to remove preservative coating and road film accumulated during transit. Completes registration application and affixes temporary certificate to windshield of vehicle.

May tune engine, using mechanic's tools and test equipment, and road test vehicle. May install or repair major mechanical, hydraulic, or electro-mechanical equipment, such as radios, power steering units and power brakes.

8581-166 AUTOMOTIVE-BRAKE REPAIRMAN(motor vehicle) DPT:384
brake repairman.
GED: 3 SVP: 6 EC: 1 PA: M 3 4

Repairs and overhauls brake systems in automotive vehicles:

Raises axle of automotive vehicle, using hydraulic jack or hoist. Removes wheels, using pneumatic wrench, and brake drums, using wheel puller and sledge hammer. Examines brake shoe units for wear and damage, and repairs or renews as required. Measures brake drum for excessive wear, using gauge. Inserts vacuum gauge into power-brake cylinders to ensure vacuum pressure is at specified level. Repairs or replaces leaky brake cylinders. Repairs or replaces defective air compressor in air-brake systems. Replaces wheel on axle and adjusts drum-shoe clearance, using wrench. Fills master-brake cylinder with brake fluid, pumps brake pedal, or uses pressure tank, and opens valves on hydraulic-brake system to bleed air from brake lines. Closes valves, and refills master-brake cylinder.

May attach new linings to brake shoes by bonding or riveting.

8581-170 AUTOMOTIVE-RADIATOR REPAIRMAN(motor vehicle) DPT:684
radiatorman.
GED: 3 SVP: 6 EC: 1 PA: M 3 4 7

Repairs radiators in automotive vehicles:

Tests radiator for obstructions or leaks by pumping water or compressed air through it. Flushes radiator with cleaning solvents to remove obstructions, such as rust or mineral deposits. Removes radiator core from vehicle and cleans it by inserting a rod, boiling in water or immersing in solvent. Solders leaks in core or tanks, using soldering iron or acetylene torch. Installs new cores and water hoses, using hand tools.

May dismantle, repair or replace defective water pump. May replace faulty thermostats and leaky head gaskets. May clean, test and repair gasoline tanks.

8581-174 SNOWMOBILE REPAIRMAN(motor vehicle) DPT:684
GED: 3 SVP: 5 EC: 1 5 PA: M 3 4 7

Repairs snowmobiles, performing any combination of the following duties:

Dismantles snowmobile and examines parts for serviceability and alignment, visually or using gauges. Replaces defective parts, using hand and power tools. Changes transmission and engine oil. Adjusts drive chain, clutch, and choke and throttle cables, according to specifications. Aligns track and pulleys. Retorques cylinder head and base. Cleans and regaps spark plugs, using sand-blasting machine and feeler gauge. Cleans gas line and filter, using air hose and solvent. Checks electrical system for proper functioning. Cleans battery terminals, and tests specific gravity of battery electrolyte, using hydrometer. Adjusts clearance between distributor points, and adjusts timing according to specifications, using automotive- test equipment. Test-drives snowmobile to ensure satisfactory performance. Performs minor body repairs, such as removing of dents and scratches, and painting repaired areas.

8581-178 USED-CAR RENOVATOR(motor vehicle) DPT:684
GED: 3 SVP: 5 EC: B PA: H 3 4 7

Renovates used cars for resale at used car lots:

Visually inspects cars for defects, such as dents, scratches, torn upholstery, worn tires, oil and water leaks, and poor mechanical operation. Smooths out dents, using hammer, block, and file. Fills small holes and scratches with plastic metal, and sands and polishes with emery cloth. Touches-up paint imperfections, using spray gun, brush and matching paint. Mends rips and tears in upholstery, using thread, needle and glue. Cleans and vacuums interiors. Washes and polishes exteriors, using water, soap and chamois. Replaces missing or defective small parts, such as door and window weather stripping, nuts, bolts, wiper blades and lights, using hand tools. Performs minor repairs and adjustments, such as adjusting doors for proper fit, and replacing spark plugs. Road tests cars to verify correction of mechanical defects, rattles and squeaks.

8581-182 AUTOMOBILE WRECKER(motor vehicle) DPT:684
wrecker; wrecking mechanic.
GED: 3 SVP: 4 EC: B 6 PA: VH 3 4

Salvages usable parts from wrecked cars and trucks in automobile salvage yard:

Removes accessories, such as mirrors, radio, aerial and battery, using hand tools. Dismantles vehicles, using mechanic's hand tools, bolt cutters and oxy-acetylene-cutting torch. Cleans parts, using solvents and brush, or degreasing machine. Stores parts in bins according to vehicle make, model, body style, part number and condition. Sorts, piles, and loads scrap on railroad cars or trucks.

May drive tow-truck to haul damaged vehicles to salvage yard. May sell salvaged automobile glass, tires, and parts.

8581-184 GLASS INSTALLER(motor vehicle) DPT:684
glassman.
GED: 3 SVP: 4 EC: 1 6 PA: M 4

Replaces safety glass, windows and windshields in motor vehicles: Unscrews frame and removes damaged glass, using hand tools. Selects appropriate paper pattern from stock or traces new one, using frame

as template. Places glass stock over pattern on flat surface and scores glass around pattern outline, using straightedge, curves and glasscutters. Inverts glass and pattern and repeats cutting procedure on other side of glass, taps coremarks to deepen cut. Cuts plastic laminate in glass, using razor blade, and removes shaped glass. Smooths edges of glass against belt-sander. Applies weather-stripping along edges of glass and fits it into window frame, or paints edge of windshield glass with adhesive compound and inserts glass into rubber channeling of windshield frame. Installs pre cut curved or tempered glass windows and windshields. Repairs or renews damaged frames or window-winding mechanisms. May repair or renew faulty door handles.

8581-186 MUFFLER INSTALLER(motor vehicle) DPT:684
GED: 2 SVP: 4 EC: I 6 PA: M 3 4

Replaces defective exhaust systems on automotive vehicles: Removes defective manifold, exhaust pipe, muffler or tail pipe, using cutting torch and hand tools. Selects replacement part according to vehicle make, model and year, using automotive-parts catalogue. Clamps or tack-welds new part in place. Aligns muffler and tail pipe and bolts hangers to frame to secure them. May replace defective shock absorbers, using cutting torch and hand tools.

8581-190 SQUEAK, RATTLE AND LEAK MAN(motor vehicle) DPT:684
GED: 2 SVP: 4 EC: I PA: M 3 4 6 7

Determines location of squeaks, rattles and leaks by test driving vehicle, or adjusts components to eliminate cause of defect: Drives vehicle, or accompanies customer on test drive, to listen for rattles, squeaks, or other noises reported by customer, indicating malfunctioning or loose components. Diagnoses cause and determines location of defect. Makes minor repairs to vehicle, such as tightening muffler and exhaust-pipe brackets, loose bolts and door handles. Sprays area suspected of water leak, as identified by customer, using water hose. Repairs leaks, using adhesive compound, or replaces faulty rubber moulding on doors and windows, using hand tools. Reports need for more extensive repairs by automobile mechanic.

8581-194 AUTOMOBILE-ACCESSORIES INSTALLER(motor vehicle) DPT:684
GED: 2 SVP: 3 EC: I PA: M 3 4 7

Installs automobile accessories, such as car heater, block heater, radio and antenna, clock, rear-seat speaker, seat covers and mirrors at automotive service center: Drills and taps holes, assembles and fits accessories to automobile, and tightens bolts and clamps, using hand and power tools. Positions custom made seat covers over seats, and fastens them by closing zippers, joining snap fasteners or securing them to cushion frame or springs, using hand tools. May replace automobile parts, such as shock absorbers, tail lights, tires and muffler systems, using hand tools and welding equipment.

8581-198 MOTOR-VEHICLE-MECHANIC HELPER(motor vehicle) DPT:684
GED: 2 SVP: 3 EC: I 4 6 PA: H 3 4

Helps motor-vehicle mechanic to repair automotive vehicles by performing the following duties: Raises vehicle to required height, using hydraulic jack or hoist. Removes and dismantles automotive units, such as engines, transmissions or differentials to be repaired, using hand and power tools. Cleans units, using prescribed solvent, steam hose or sand-blasting machine. See also definition for term title, 02-160 HELPER (any ind.). May lubricate and wash vehicles.

8581-202 SPRING SERVICEMAN(motor vehicle) DPT:684
GED: 2 SVP: 2 EC: I 5 PA: H 4

Removes and installs leaf springs of vehicles, such as automobiles, buses, and trucks: Raises vehicle, using hydraulic jack or hoist. Places mounting stands under vehicle to relieve pressure from springs. Removes V-bolts, shackles pins and shackles to gain access to springs, using impact

wrench and hand tools. Removes leaf springs and carries them to repair shop. Installs repaired springs, brackets and bushings. May repair springs by replacing cracked or pitted-spring leaves with sound leaves of same length and thickness.

8581-206 BODY-REPAIRMAN HELPER(motor vehicle) DPT:687

body-and-fender-man helper.

GED: 2 SVP: 2 EC: I 5 6 7 PA: M 3 4

Helps repair damaged body parts and interior finishings of vehicles: Removes upholstery and accessories to gain access to damaged areas. Assists in the removal and installation of body parts, such as fenders, panels, grills, radiators, bumpers, and windows, using hand tools, cutting torch, and hoists. Files, grinds, sands and cleans repaired surfaces, using power tools, such as grinders and buffers, and cleaning materials, such as rags, water and solvents. See also definition for term title, 02-160 HELPER (any ind.).

8581-210 STEAM CLEANER(motor vehicle) DPT:687
GED: 2 SVP: 2 EC: I 3 4 6 PA: M 4

Cleans engines, bodies, and parts of automotive vehicles, using steam hose and detergent solution: Starts electric or oil-fired boiler to generate steam. Opens valves on steam, water, and detergent lines. Sprays steam and detergent solution over vehicle body, engine, or parts, such as radiator cores and gas tanks, to remove dirt and grease. Raises vehicle or heavy parts above ground to facilitate cleaning of underside, using pneumatic or hydraulic hoist. Scrapes off dirt and grease, using wire brush or scraper. Cleans and dries treated surfaces, using vacuum cleaner or compressed-air blower. May lower engine or chassis parts into tank of detergent solution, by hand or using hoist, to clean inaccessible surfaces.

8582-AIRCRAFT MECHANICS AND REPAIRMEN

This unit group includes occupations concerned with repairing aircraft airframes, engines, accessories and related equipment. Activities include: servicing, disassembling, replacing, fitting and adjusting parts and equipment, using common and special hand and power tools, machines and equipment.

8582-110 AIRCRAFT MECHANIC(air & space-craft) DPT:261
aircraft-and-engine mechanic.
GED: 4 SVP: 7 EC: B 5 6 PA: M 2 3 4 7

Services, repairs, and overhauls aircraft and aircraft engines to ensure airworthiness, performing any combinations of the following duties: Repairs, replaces and assembles parts, such as wings, tail assembly, landing gear, propeller assembly, and fuel and oil tanks, using hand and power tools, and welding equipment to rebuild or replace the airframe or its components. Consults manufacturers' and companies' maintenance manuals to determine feasibility of repair or replacement of parts according to malfunction. Examines engines for cracked cylinders and oil leaks, and listens to detect sounds of malfunctioning, such as sticking or burnt valves. Tests engine operation, using testing equipment to locate source of malfunction. Replaces worn or damaged components, such as carburetors, magnetos and superchargers, using hand tools. Disconnects supply lines, and removes engine from aircraft, using hoist or forklift truck. Disassembles and inspects parts for wear, warping or other defects, using hand tools and measuring instruments. Repairs or replaces defective engine parts. Reassembles, adjusts and tests engine operation for conformance with specifications. Installs engine in aircraft, and connects supply lines. Inspects, services and repairs pneumatic and hydraulic systems. Services aircraft by performing duties, such as flushing crankcase, cleaning screens, greasing moving parts, and checking brakes. May adjust and repair electrical wiring system and aircraft accessories and instruments. May repair particular types of engines or aircraft and be designated accordingly; for example, Helicopter Mechanic Piston-Engine Mechanic Turbine-Engine Mechanic

8582-114 AIRCRAFT-ACCESSORIES MECHANIC(air & space-craft) DPT:281
GED: 4 SVP: 6 EC: I PA: M 4 7

Repairs, assembles and tests aircraft accessories, such as power- brake units, superchargers, auxiliary electric motors, fuel-injection systems and hydraulic and vacuum pumps:

Disassembles unit, using hand or power wrenches and screwdrivers. Cleans and finishes parts by hand, using cleaning solutions, and polishing and lapping compounds. Measures parts to determine wear, using micrometers and dial indicators. Replaces defective parts and reassembles units. Connects accessories to appropriate test panels and test equipment, and tests units for conformance to specifications under simulated operating conditions. Enters test data on log sheets, and affixes tag to acceptable units.

8582-118 DOPE-AND-FABRIC MAN(air & space-craft) DPT:381
airplane coverer.
GED: 3 SVP: 6 EC: I 6 7 PA: M 3 4 7

Installs and repairs fabric-aircraft-surface coverings:

Covers edges, rough surfaces or projections of structural framing with adhesive tape to prevent chafing of lacing-cords and fabric cover. Plans and lays out dimensions of surface to be covered on fabric, so that weave of fabric and placement of seams conform to specifications. Cuts fabric to size, using hand or electric shears. Stitches seams, using upholster's needles or sewing machine to form envelope or blanket that fits structure to be covered, applying knowledge of approved seam types and stitching specifications. Reinforces seams, envelope, or blanket with fabric tape. Stretches fabric over frame and fastens it to structure, using dope-cement, needle and lacing-cord, or metal strips and screws. Shrinks and smoothes fabric covering, using steam hose. Applies diluted dope to prime and tighten fabric, using hand brush or spray. Reinforces and smoothes seams by applying surface-tape and dope after first coat of dope has dried. Brushes or sprays on clear and silver dope to strengthen and preserve fabric. Applies pigmented dope with brush, roller, or spray to colour and finish surface.

8582-122 AIRCRAFT-MECHANIC HELPER(air & space-craft) DPT:684
aircraft-and-engine-mechanic helper.
GED: 3 SVP: 5 EC: B 5 6 PA: M 2 3 4 7

Helps mechanic to service and repair aircraft and aircraft engines, performing any combination of the following duties:

Adjusts and replaces parts, such as control cables, fuel tanks, spark plugs and tires, using mechanic's hand tools. Disconnects instruments, ignition system, and oil lines to facilitate repair. Helps in dismantling, assembling and cleaning engines and aircraft parts, using mechanic's hand tools and solvents. Inflates tires according to specifications. Fills oil reservoirs, and greases aircraft, using lubricating equipment. See also definition for term title, 02-160 HELPER (any ind.).

8582-126 AIRCRAFT DE-ICER REPAIRMAN(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: I 7 PA: L 4 7

Repairs pneumatic de-icers used in aircraft:

Inflates de-icers to specified amount of air pressure, using hose, and observes air pressure gauge and rubberized-fabric tubes for leaks. Cuts out defective spots, such as cracks and blisters, from rubber plies of air tubes, manifold and de-icer, using knife. Buffs defective area to prepare it for patching, using portable electric or air buffer. Swabs defective area with rubber cement to provide adhesive surface. Positions uncured rubber patch on defective area and rolls it with hand roller to improve adherence. Trims excess rubber from patch, using knife. Cures and vulcanizes patch, using portable vulcanizing equipment. Rechecks de-icers for leaks.

8583-RAIL TRANSPORT EQUIPMENT MECHANICS AND REPAIRMEN

This unit group includes occupations concerned with

repairing and servicing railway rolling stock, motive-power units, and related equipment. Activities include: testing, examining, and replacing parts and assemblies, and adjusting to specifications, using special hand and power tools, machines and equipment.

8583-110 CARMAN(rail. rolling stock) DPT:361
car repairman.
GED: 4 SVP: 7 EC: B 5 7 PA: H 3 4 5 6 7

Repairs and rebuilds mechanical and structural components of railway passenger and freight cars:

Examines car, car components and equipment; such as, cabinets, panels, floors, wheels, brake assemblies, reservoirs, valves and coupler assemblies, and side, end and roof sections to determine defects and extent of wear and damage. Replaces metal or wooden sections, using cutting or welding torch, plumber's tools, hand and power tools. Positions width gauge between car sides, aligns sides, and installs car ends and cross ties, using pneumatic or hydraulic hoist, turnbuckles, jacks, and hand and power tools. Removes, disassembles, repairs, reassembles, and installs car parts and related units, such as air valves, air cylinders and piping, using hand and power tools. Tests and adjusts reassembled parts and equipment, using gauges and test equipment, to verify correct installation and operation. Fabricates or repairs and installs wooden fixtures, using hand and power tools. Performs a variety of other repair and maintenance duties, such as refinishing painted or varnished surfaces, repairing upholstery, and replacing glass, using appropriate power and hand tools. Directs helper in performing various duties concerned with repair of railway freight and passenger cars.

8583-114 STREETCAR AND SUBWAY-CAR MECHANIC(rail. rolling stock) DPT:381
GED: 4 SVP: 7 EC: I PA: M 3 4 7

Repairs, adjusts or replaces electrical, mechanical or pneumatic equipment on streetcars and subway cars:

Tests and adjusts traction, control, and pneumatic equipment; such as, switches, pneumatic-door valves, wind-shield wipers, accelerator gear units, and brake cylinders. Repairs or replaces defective units; such as, traction motors, springs, brakes, wheels and bearings, trolley assemblies, third-rail-collector shoes; drive shafts, compressors and related components according to manufacturers' specifications. Replaces worn carbon brushes or brush holders on motors and generators. Disassembles and replaces defective parts in axle, wheel and gear assemblies, using wheel press, hoist, hand and power tools. Raises vehicle, using hydraulic jack or hoist to repair or inspect underside of vehicle. Operates wheel-grinding machine to grind wheels to correct flange and tread contours. Oils and lubricates units as required.

May perform duties of 8581-126 TROLLEY-COACH MECHANIC (motor vehicle). May answer trouble calls concerning defective vehicles and make necessary repairs to enable the return of the vehicle to repair shop and be designated accordingly, Emergency Repairman, Transit Vehicle

8583-118 AIR-VALVE REPAIRMAN(rail. rolling stock) DPT:381
GED: 3 SVP: 5 EC: I PA: L 4 7

Repairs compressed-air valves, such as triple-air, cutoff, and retainer valves used in railway rolling stock:

Disassembles valves, using power wrench and hand tools. Cleans parts with cleaning solvent and air hose. Measures parts; such as, gaskets, valve seats, pistons, and slides, using gauges, for conformance to specifications. Scrapes, grinds, and polishes metal-contacting surfaces to make them airtight, using grinding and polishing tools. Replaces defective parts and reassembles valves. Tests reassembled valves for correct operation.

May replace defective valves in railway cars, using hand tools.

8583-122 CARMAN HELPER(rail. rolling stock) DPT:684
car-repairman helper.
GED: 3 SVP: 4 EC: B 5 6 PA: H 3 4 5 6

Helps other worker to repair and rebuild mechanical and structural components of railway cars, such as freight, tank and mine cars by performing any combination of the following duties:

Helps in disassembling parts and moving heavy metal components.

Threads nuts and bolts, and drills holes in metal stock, using taps, dies, and drill press. Cuts metal sheet and bar stock to specified dimensions, using shears and hacksaw. Straightens metal parts, using hammer and sledge. Bolts steel top frames to side frames of car, using power wrench. Caulks seams of car and checks for leaks. Repairs or replaces steam and air hoses. See also definition for term title, 02-160 HELPER (any ind.).

8584-INDUSTRIAL, FARM AND CONSTRUCTION MACHINERY MECHANICS AND REPAIRMEN

This unit group includes occupations concerned with repairing and servicing a wide variety of industrial machinery, such as that used in printing, textile manufacturing, mining and in other production processes; material-handling and conveying equipment; farm machinery, such as combines, ploughs, mowers and milking machines; construction equipment, such as bulldozers, graders and cranes; and gasoline and diesel engines associated with industrial, farm and construction machinery. Activities include: diagnosing, disassembling, replacing parts and assemblies, reconditioning, aligning, fitting, reassembling and adjusting to specifications, using common and special hand and power tools and equipment.

Industrial Machinery 8584-110 through 8584-306

8584-110 PRINTING-MACHINERY MECHANIC(mech. equip., n.e.c.) DPT:261
GED: 4 SVP: 8 EC: I 5 PA: H 3 4 7

Repairs and services printing machinery, such as linotype machines, line-and-character-type casting machines, offset or letter-type presses, proof presses, typesetter-keyboard converters and reproduction units, according to manufacturers' service manuals:

Inspects and operates machines to detect potential malfunctions, listening for evidence of excessive wear and improper adjustment. Discusses nature of malfunction with operator. Dismantles machines and components, using hand tools. Repairs, straightens, files, or machines worn or defective parts, using hand and power tools, and machine-tools, such as lathe, drill press and grinder. Verifies dimensions of new or repaired parts, using micrometer and fixed gauges. Replaces repaired parts or installs new parts to restore machine to efficient operating condition. Cleans parts, and lubricates grease fittings and moving parts of machines according to prescribed schedule.

8584-114 LOOM FIXER(textile) DPT:280
fixer; loom repairman.
GED: 4 SVP: 7 EC: I 5 7 PA: M 3 4 7

Sets up, adjusts and repairs looms that weave cloth of specified quality and design, using diagrams, manuals, and knowledge of loom function and weaving:

Examines loom or woven cloth to determine adjustments or repairs needed. Repairs or replaces parts, such as harness straps and shuttles, and adjusts tension and timing of parts, using hand tools. Levels and aligns parts, such as shuttle boxes, race plates, and reeds, to prevent excessive wear, using straightedge, level and square. Lubricates and cleans loom, using oil, grease, and compressed air.

May change setup of loom to weave different pattern or different type yarn. May set up and repair looms equipped with pile-wire mechanism to weave piled carpeting. May be designated according to type of loom serviced or component repaired; for example,

Carpet-Loom Fixer
Jacquard-Loom Fixer
Shuttle Fixer

8584-118 MACHINE FIXER, TEXTILE(textile) DPT:280
GED: 4 SVP: 7 EC: I 5 6 7 PA: M 3 4 6

Adjusts, sets up and repairs yarn-manufacturing and processing machines:

Changes and adjusts gears, pulleys, rollers, cylinders and guides, according to type of sliver of yarn processed, type of wind, draft, or number of twists per inch, using hand tools and knowledge of machine operation. Verifies adjustments, using gauges and instruments, such as tensiometer, tachometer and densimeter. Patrols work area to detect operating defects. Inspects machine, and adjusts to correct malfunctions. Sharpens straight and spiral blades of cloth-shearing machines, using grinding machine. Carries out preventive maintenance program and replaces worn and broken parts; such as, spindles, rollers, carriages and bobbins, guides, gears, cylinders, tapes and belts, using hand tools.

May erect new machines and be designated according to machines maintained; for example,

Card Fixer
Quiller-Machine Fixer

8584-122 MILLWRIGHT(mech. equip., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I 5 6 PA: H 2 3 4 5 6 7

Installs machinery and supporting structures in an industrial or other establishment according to manufacturer's specifications, layout plans and drawings:

Reads diagrams and schematic drawings to determine work procedures. Dismantles machines, using hammers, wrenches, crowbars, and other hand tools. Moves machinery and equipment, using hoists, dollies, rollers, and trucks. Assembles and installs equipment, such as pulleys, shafts and belts on machines, conveyors, rollers and presses, using hand and power tools. Constructs foundations for machines, using hand tools and building materials, such as wood, cement, and steel. Aligns machines and equipment, using hoists, jacks, hand tools, squares, rules, micrometers, level and plumb line. Assembles machines, and directs welders or mechanics to fasten them together or to foundation or other structures. Directs erection of scaffolds and performs simple rigging to erect or dismantle machines. Tests reassembled equipment and makes necessary adjustments. Repairs or replaces defective parts.

May operate metalworking machines, such as lathes and grinders, to grind, file and turn machine parts to dimensional specifications. May repair machines and equipment, such as conveyors, grinders, crushers and cookers and be designated accordingly,
Plant-Maintenance Man

**8584-126 ORE-PROCESSING-EQUIPMENT
REPAIRMAN**(mech. equip., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: B 5 6 PA: M 2 3 4 7

Repairs machinery and equipment used in transporting and processing ore:

Repairs machinery and equipment, such as ball mills, crushers, classifiers, flotation machines, conveyor-belt systems, thickener tanks and vibrating screens used in transporting and processing ore. Dismantles machinery, or directs dismantling operations, and replaces and fits parts in accordance with manufacturer's manuals and drawings, using hand and power tools, drill presses, lathes and other machine-tools. Adjusts mechanical clearances and drive belt tensions, using wrenches and gauges.

8584-130 POWERHOUSE REPAIRMAN(mech. equip., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I 5 6 PA: H 2 3 4 6 7

Installs, adjusts and repairs mechanical equipment and parts of machinery in electric-generating stations, such as generators, water-wheels, valves and piping:

Installs machinery and equipment, according to lay-out plans and drawings, using hoists, lift trucks, hand and power tools. Examines and listens to equipment in operation to diagnose malfunctions. Dismantles machinery and such auxiliary equipment as compressors and pipe systems, using instruction manual. Repairs or replaces defective parts and reassembles machinery and auxiliaries. Conducts performance tests on new or repaired equipment, following specifications.

May fabricate special tools and replacement parts for equipment. May specialize in repairing mechanical equipment in a particular type of

electric-generating station and be designated accordingly; for example,
Gas-Turbine-Machinery Repairman
Nuclear-Power-Station-Machinery Mechanic
Steam-Turbine-Machinery Repairman

8584-134 METALWORKING-MACHINERY
MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: I 5 6 PA: M 4 6 7

Repairs and maintains metalworking machines, such as lathes, milling machines and grinders:

Observes and listens to machines in operation, and examines finished products to locate causes of malfunction. Dismantles machines and equipment to gain access to defective parts, using hand and power tools. Examines and measures parts for defects and excessive wear, using precision-measuring instruments. Installs and adjusts replacement parts. Measures, cuts, threads, and replaces air and water lines. Assembles machines and equipment, and starts them to test their operation. Cleans and lubricates machines and related equipment, using solvent, rags and grease gun.

May repair broken parts, using welding, brazing and soldering equipment. May fabricate and fit safety equipment to machines. May set up and operate metalworking tools to make and repair parts.

8584-138 CHEMICAL-PROCESS-EQUIPMENT
MECHANIC(mech. equip., n.e.c.) DPT:261
GED: 3 SVP: 7 EC: I 5 6 7 PA: H 2 3 4 5 7

Repairs, adjusts and installs process equipment in chemical plant according to knowledge of equipment operation and plant specifications:

Observes equipment, such as pumps, compressors, generators, reactors, heat exchangers, filters, and stripping towers in operation, or confers with operators to detect and diagnose mechanical malfunctions. Disassembles equipment, using hand tools, portable power tools and rigging equipment, such as hoists and slings. Examines parts for defects, such as breakage or excessive wear. Verifies dimensions of parts, using calipers and micrometers. Replaces defective parts, and reassembles equipment. Adjusts clearance and timing of control devices to specifications, using hand tools. Installs new equipment or modifies existing installations, following drawings and directions from supervisor. Directs helper in performing tasks, such as dismantling and assembling equipment.

May operate welding equipment, lathe, drill press, and other metalworking machines, to repair or fabricate parts.

8584-142 BAKERY-MACHINERY MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I PA: M 3 4 7

Repairs and maintains bakery machinery and equipment, such as ovens, dough-mixers, conveyors, and icing and wrapping machines:

Observes and listens to equipment in operation to diagnose malfunctions. Dismantles bakery machinery and equipment, to remove damaged or worn parts, using hand tools. Repairs or replaces defective parts, such as belts, shafts, cutting blades and other machine parts, using hand and power tools, welding equipment and sewing machine. Assembles and tests equipment and makes necessary adjustments. Changes and sets dies on machines, according to form of product required.

May sharpen cutting blades.

8584-146 BOILERHOUSE REPAIRMAN(mech. equip., n.e.c.) DPT:281
steam-plant maintenance man.
GED: 4 SVP: 6 EC: I 3 5 6 PA: M 3 4 7

Maintains and repairs stationary-steam boilers and auxiliary equipment:

Examines boilers and auxiliary equipment to detect or diagnose malfunctions. Repairs boiler fittings, such as safety valves, regulators and automatic-control mechanisms, and auxiliary equipment, such as pumps, draft fans, stokers, and burners, following manufacturer's specifications, and using hand and power tools. Replaces or repairs damaged boiler tubes, plates and high-pressure piping, using pipe-fitting tools and welding equipment. Patches boiler insulation with

asbestos cement. Oversees cleaning of boilers and furnaces, preparatory to inspection, by ensuring that boiler tubes and interior are free of soot, scale, dust and ashes.

May re-align crank shafts, and seat valves on pumps and engines. May machine new or worn parts, using metalworking machines and tools.

8584-150 FORGE-SHOP-MACHINERY REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I 3 5 7 PA: H 3 4 7

Repairs and maintains forge-shop machinery, such as hammers, presses and furnaces:

Observes machine in operation to determine malfunction. Disassembles machine, using hand tools, and examines parts for defects. Obtains replacement parts from stock, or prepares sketches of parts for fabrication in forge shop or machine shop. Replaces drophammer boards, and adjusts steam, pneumatic, hydraulic, fuel and blower controls of presses, hammers and furnaces, following manufacturers' manuals and drawings, and using hand tools. Measures and fits parts together to reassemble machine, using measuring instruments, hand and power tools. Examines and repairs auxiliary equipment, such as pumps, valves, and compressors. Starts machine, and observes operation to verify its performance.

May weld broken or cracked parts.

8584-154 GUM-WRAPPING-MACHINE MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I 5 PA: M 3 4 7

Repairs and adjusts automatic-gum-wrapping and packaging machines:

Dismantles machine and inspects, cleans, and oils parts, using hand tools. Repairs or replaces worn parts. Operates metal-working machines, such as lathes, milling machines, pedestal and bench drills, grinder and shaper to make replacement parts, in accordance with specifications, and checks dimensions, using measuring instruments. Sets up and adjusts gum-wrapping and packaging machines, using hand tools. Operates and adjusts machine to ensure correct operation.

8584-158 TANNERY-MACHINERY REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I 4 5 6 7 PA: H 3 4 7

Repairs and adjusts tannery equipment, and machines that flesh, split, shave and soften hides:

Disassembles malfunctioning equipment, using hand tools, to ascertain nature and location of defects. Repairs damaged parts, using welding and other equipment. Repairs or replaces machine drive-belts and conveyor belts. Installs blades in fleshing, shaving and dehairing machines. Reassembles and adjusts machinery, to manufacturers' specifications, using precision-measuring instruments, such as micrometers, verniers and gauges.

May install new tannery machinery.

8584-162 PACKAGING-MACHINE MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I 5 PA: M 3 4 7

Repairs, adjusts and maintains machines and equipment that package products, such as food and drugs:

Installs filling, capping, wrapping and sealing mechanisms on machine, and adjusts machine for operation. Connects power source and product-feed hoses to machine. Turns set screws to adjust guides, jigs, and speed of conveyors and transfer mechanisms, to accommodate dimensions of package and specified production volume. Starts machine and diagnoses and locates causes of malfunctions by observing machine in operation. Dismantles machine and repairs or replaces worn or defective parts, using hand tools. Cleans and lubricates machines to ensure efficient operation.

May collect samples of packaged products, and forward to quality-control department for inspection. May attach safety guards to machines.

8584-166 QUILTING-MACHINE FIXER(mech. equip., n.e.c.)
DPT:281

quilter mechanic.

GED: 4 SVP: 6 EC: I PA: M 3 4 6 7

Repairs and adjusts quilting machines, according to charts and knowledge of machine construction and operation:

Consults charts to determine adjustments necessary to effect change in quilting design. Selects cams that will alter movement of machine bed and needle stroke to produce specified design, and installs cams on machine, using wrenches. Synchronizes looper or shuttle motion with needle stroke, using screwdriver. Examines machine for defects, locating defects by listening to machine in operation, and examining finished products. Dismantles machines and repairs or replaces broken or defective parts, such as motors, loopers and feed dogs, using hand and power tools. Cleans and oils machines.

May turn screws to regulate tension on thread, length of needle stroke, and rate of feed, according to type of fabric or thread.

8584-170 MAINTENANCE MECHANIC, COMPRESSED-GAS PLANT (mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: B PA: M 3 4 7

Repairs, tests and maintains equipment, such as converters and compressors that liquify and compress gases for industrial and therapeutic uses:

Dismantles, tests, and analyzes malfunctioning equipment, using drawings, manufacturers' manuals, hand and power tools, and test apparatus, to determine nature and location of defects. Repairs or replaces defective parts or pipes, using hand and power tools, pipefitter's tools, and welding equipment. Repacks compressors and pumps. Checks, adjusts and lubricates equipment to ensure proper operation. Records repair work performed and condition of equipment.

May test, repair and adjust electrical circuits and equipment, using schematic diagrams and power and hand tools. May install gas-compressing and liquefying equipment at customers' sites.

8584-174 MINING-MACHINERY MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I 5 6 7 PA: VH 2 3 4 6 7

Repairs, maintains and installs mining machinery, such as stripping and loading shovels, drilling machines, conveyors and compressors:

Diagnoses mechanical defects in mining machinery, visually and aurally, by examining parts for signs of wear, and listening to machinery in operation. Repairs or replaces defective equipment or machine parts, or modifies existing equipment, working from manufacturers' manuals and drawings, and using hand tools, portable power tools and other work aids. Requisitions replacement parts or forwards defective parts to maintenance workshop for repair. Performs routine preventive maintenance, such as greasing, and checking lubricant and coolant levels. May perform oxy-acetylene torch cutting and minor arc welding to remove, install, or repair machinery.

8584-178 OIL-TOOL-MAINTENANCE MAN(mech. equip., n.e.c.; oil & nat. gas) DPT:281
tool-maintenance man.
GED: 4 SVP: 6 EC: B PA: M 4 7

Repairs and maintains oil-well tools and equipment used in performing special services, such as cementing, acidizing, or electrical logging: Dismantles and repairs equipment at well site, using special tools, hand tools and pneumatic tools. Reconditions and maintains tools and equipment, working in shop, and using hand and power tools. Tests equipment to detect defects or to verify specified operation, using hydraulic gauges and electrical testing apparatus.

May specialize in maintenance of tools and equipment used for one type of operation; such as, cementing, acidizing, electrical logging, or gun-perforating.

8584-182 POWDER-LINE REPAIRMAN(explosives; mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I 6 7 PA: M 3 4 7

Repairs and adjusts mixing and packing machines used in production of nitroglycerine and dynamite:

Washes machines and parts with sodium carbonate or other neutralizing compound, prior to and during dismantling, to minimize danger of explosion, using brush and rags. Determines cause of equipment malfunction, utilizing knowledge of machine operation and report of operator or maintenance workers. Dismantles, repairs, replaces and adjusts nipple plates, scales, pulleys, belts, crimpers, nitroglycerine nitrators, separators and other machine parts, using spark-proof-hand tools. Observes specified safety rules and regulations while working in explosive areas. Lubricates machines, using oil can and grease gun.

8584-186 TREATMENT-PLANT MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: I PA: M 3 4 7

Services and repairs machines and equipment used to process and distribute water for human consumption and industrial use:

Examines faulty machinery and equipment to determine nature and location of defects. Dismantles equipment, such as electric motors, turbines, pumps, hydraulic valves, chlorinators, lime slakers, meters, and gauges, to gain access to or remove faulty parts, using hand and power tools. Repairs or replaces defective parts, such as bearings, pump-shafts and impellers. Lubricates moving parts.

May operate, or supervise the operation, of plant equipment to process and distribute water.

8584-190 WELDING-EQUIPMENT REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 7 EC: I 5 6 7 PA: M 3 4 7

Repairs and maintains welding, brazing and flame-cutting machines, according to drawings and manufacturers' specifications, applying knowledge of electricity, machine repair and welding procedures:

Examines equipment and observes operation to detect cause of malfunction. Dismantles equipment and replaces or repairs damaged parts, such as hoses, torch tips, valves, regulators, transformers, cables, electrodes, bearings and gears, using hand tools and bench- power tools. Solders loose connections, and welds cracked or broken frames and housings, using welding equipment. Dresses nonconsumable electrodes, using grinding wheel. Reassembles, adjusts, operates and tests equipment to ensure specified performance, using electrical testing apparatus.

May repair specific type of welding equipment and be designated accordingly; for example,

Arc-Welding-Burning-Equipment Repairman
Gas-Welding-Equipment Repairman

8584-194 OVEN-EQUIPMENT REPAIRMAN(mech. equip., n.e.c.) DPT:261
GED: 3 SVP: 6 EC: B 3 6 7 PA: H 2 3 4 5 6 7

Repairs and maintains coke-oven machinery and auxiliary equipment: Examines faulty equipment or listens to machinery in operation, such as pushers, coal chargers, door-removers and coke guides, to determine nature and location of defects. Dismantles, or directs other workers to dismantle equipment, and adjusts or replaces defective parts, using bars, air-hammers, and hand tools. Assembles equipment, and checks for correct operation. Notifies foreman of major repairs required, such as replacement of defective bearings or gears and shafts.

May perform simple rigging, pipefitting and metal cutting tasks.

8584-198 SEWING-MACHINE MECHANIC(mech. equip., n.e.c.) DPT:261
sewing-machine repairman.
GED: 3 SVP: 6 EC: I 5 6 PA: L 3 4 6 7

Repairs and adjusts domestic and commercial textile sewing machines: Inspects machines and observes operation to locate cause of malfunction. Dismantles machine, using hand tools, and examines parts, such as automatic counter, cutting knives and needles for excessive wear or damage. Repairs, or replaces and adjusts worn or defective parts, using hand and power tools. Reassembles equipment with new or

repaired parts, using hand tools. Sets depth of blades on cutting knife to ensure smooth action. Regulates length of needle stroke and horizontal movement of feeding mechanism, using hand tools. Sets tolerance of needle looper, using screwdriver and tolerance gauge. Observes operation of reassembled machine for proper functioning. Maintains stock of replacement parts, and keeps performance records of machines. Instructs machine operators in operator's maintenance techniques.

May operate machine-tools, such as lathes and drill presses to make parts.

8584-202 AMMUNITION-ASSEMBLING-MACHINE

ADJUSTER (explosives; mech. equip., n.e.c.)

DPT:281

GED: 3 SVP: 6 EC: I 5 6 7 PA: M 3 4 7

Adjusts, repairs and maintains various types of machines that assemble, charge, crimp, waterproof, measure, weigh and stamp-out parts for shotgun shells and cartridges:

Examines samples of ammunition and their component parts for defects, such as dents, scratches, incomplete crimping and blurred printing, and for conformance to specifications, using gauges. Dismantles machines to remove defective parts and to clear jams not removable by operator. Repairs or replaces defective bushings, punches, crimpers, hoppers, springs, pins, dies, tension belts and other components, using hand tools. Assembles parts and tests operation of machines. Adjusts machines by turning setscrews, stop-nuts, bolts and wing-nuts to synchronize and regulate feeding, ejection, gauging, weighing, coiling, and pressing mechanisms, until machines produce acceptable work, using hand tools and gauges. Cleans machines and lubricates moving parts.

May specialize in repairing, adjusting and maintaining a particular type of ammunition-assembling machine and be designated accordingly; for example,
Foiling-Machine Adjuster
Inspecting-Machine Adjuster
Loading-Unit Toolsetter
Primer-Charging Toolsetter

8584-206 CARTON-FORMING-MACHINE

REPAIRMAN (mech. equip., n.e.c.)

DPT:281

GED: 3 SVP: 6 EC: I 5 PA: M 3 4 7

Repairs and adjusts carton-forming machines:

Observes machine in operation, and examines finished product to determine malfunctions. Adjusts glue rollers, code-stamping unit, guide rails, spring loader feed gauge, and carton-forming tips, using hand tools. Dismantles machine, following manufacturers' manuals or drawings, to remove, repair and replace defective parts, using hand tools. Sets up and operates bending brakes, drill presses, shapers and other metal-working machines to manufacture or repair machine parts. Requisitions spare parts from stockroom.

May oversee activities of carton-forming-machine operators and instruct them in operation and maintenance of machine.

8584-210 FIBREGLASS-FORMING-MACHINE

REPAIRMAN (mech. equip., n.e.c.)

DPT:281

GED: 3 SVP: 6 EC: I 3 5 7 PA: L 3 4 7

Repairs and adjusts parts of fibreglass-forming machines, applying knowledge of machine operation:

Examines machine parts and product to determine type of defect. Removes, replaces, and repairs worn or damaged parts, such as conveyor and collector systems, graphite shoes, guides and bushings, binder applicators, and spray guns, using hand tools. Turns setscrews and nuts to align machine parts. Mounts graphite shoes on shaft and inserts shaft into chuck of turning lathe. Starts lathe and holds abrasive cloth against shoes to remove nicks, dirt, and burrs. Holds and turns spiral traverse against buffing wheel to smooth and clean traverse. Cleans glass and binder solution from binder applicators, wiper bars and idler rolls, using chemical solution or abrasives. Records production information, such as volume of fibreglass produced, and parts changed or repaired.

May direct crew in fibreglass production and set up and adjust machines as required.

8584-214 LAUNDRY-MACHINE MECHANIC (mech. equip., n.e.c.)

DPT:281

maintenance mechanic, laundry.

GED: 3 SVP: 6 EC: I 4 5 6 PA: H 3 4 7

Repairs and maintains commercial laundry equipment, such as washers, dryers, extractors, presses and pumps:

Examines faulty equipment to determine nature and location of malfunction. Dismantles equipment, and replaces defective parts, using hand tools. Assembles machines, and tests them for conformance with manufacturers' manuals. Replaces defective steam and water pipes, and air and gas lines, using pipefitter's tools. Greases and oils equipment periodically, using grease gun and oil can.

May fabricate replacement parts, using welding equipment and power tools. May install, repair and maintain electrical systems of laundry equipment.

8584-218 RECORD-PROCESS-EQUIPMENT

REPAIRMAN (mech. equip., n.e.c.)

DPT:281

GED: 3 SVP: 6 EC: I 5 6 PA: M 3 4 6 7

Repairs and adjusts phonograph-record-processing equipment, such as injection-moulding machines, presses and electroplating tanks:

Determines mechanical defects in record-making equipment, by examining and measuring parts for signs of excessive wear, and listening to and observing equipment in operation. Dismantles, or partially dismantles equipment, and removes, replaces, adjusts, or repairs defective parts, and reassembles equipment, using hand and power tools and manufacturers' specifications.

8584-222 SEAMER-MACHINE REPAIRMAN (mech. equip., n.e.c.)

DPT:281

GED: 3 SVP: 6 EC: I 5 PA: M 3 4 7

Repairs and maintains automatic can-closing or seaming machines:

Observes operation of machine during production runs to detect faulty machinery. Disassembles machine and replaces defective parts, using hand tools. Cleans and oils parts. Changes and adjusts fixtures to accommodate containers of various sizes. Tests machines for proper accommodation of container, and examines seams on cans for defects. Instructs machine operators as required.

8584-226 TOBACCO-MACHINE ADJUSTER (mech. equip., n.e.c.)

DPT:281

GED: 3 SVP: 6 EC: I 5 PA: M 3 4 6 7

Repairs and adjusts machines used in processing tobacco products, utilizing knowledge of machine function and mechanical repair:

Listens to and observes defective machine operation to determine cause of malfunction. Turns setscrews, nuts, or bolts to adjust parts, such as tension, timing and feeding devices, drive belts, cutoff knives and gears, using hand tools. Dismantles machine, following manufacturers' manuals, drawings, or diagrams, and repairs or replaces worn or damaged parts, such as springs, belts, and bushings. Notifies or confers with supervisor when major overhaul is indicated.

May give directions to workers in machine operation. May be designated according to type of machine adjusted; for example,

Cigarette-Making-Machine Adjuster

Cigarette-Packing-Machine Adjuster

Slide and Shell Adjuster

8584-230 CARD GRINDER (mech. equip., n.e.c.)

DPT:681

carding-machine fixer; card setter.

GED: 3 SVP: 6 EC: I 5 6 7 PA: H 3 4 6 7

Repairs and sharpens metal teeth of textile-carding machines, using emery wheel:

Examines carding machines for damaged wire teeth, and removes and cleans teeth, using hand tools. Lifts grinding rollers onto brackets above flats and carding and doffing cylinders of machine. Places drive belt between carding-machine-drive mechanism and grinder rolls, and starts machine. Turns setscrew and listens to sound of grinder to regulate pressure of grinding roller on teeth of drum. Examines and feels teeth to verify that grinding meets specifications. Adjusts clearances between card rolls and flats to set up machine, using gauges, and listening for contact of surfaces.

May sharpen teeth without removing them, by attaching emery wheel

to carding machine. May operate machines to replace worn clothing on carding machine flats.

8584-234 SHEARING-MACHINE FIXER(textile) DPT:681
fixer, cutting machine.

GED: 3 SVP: 6 EC: I PA: M 4 7

Adjusts and repairs machines that cut pile on fabrics, such as velvet and corduroy, employing knowledge of machine operation and cutting process:

Turns thumbscrews to raise or lower straightedge, so that blades will cut through filling floats without damaging ground cloth, using thickness gauge as guide. Patrols work area and examines cloth and machines to detect operating defects. Replaces worn or broken parts, such as belts, cams, gears, pulleys, and cutting blades, using hand tools. Operates grinding machine to sharpen cutting blades. Lubricates and cleans machines.

8584-238 MACHINE-CLOTHING MAN(pulp & paper) DPT:384
feltman.

GED: 3 SVP: 6 EC: I 5 6 PA: M 2 3 4 7

Replaces felt, canvas and continuous-wire-mesh belts on papermaking machines:

Reviews clothing-service records of each machine to determine when belts should be replaced. Examines belts for defects, such as wear, holes and rotted areas. Schedules times for repair or replacement to minimize production delays. Lifts feed, tension, press and drier rolls from machine frame, using hoist, wrench and pinchbar. Removes lacing or rivets from worn canvas and felt belts, and unwinds belts from machine rolls. Pulls worn wire-mesh belt from machine over end of rolls. Threads canvas and felt belts around rolls and rivets, or laces ends together. Slides and pushes mesh belt over end of rolls into position on machine. Repositions rolls on machine frame, and starts machine. Moves levers and turns handwheels to adjust speed and pressure of rolls and belt tension. Keeps records of belts used.

8584-242 ROLL BUILDER(mech. equip., n.e.c.) DPT:664
roll setter.

GED: 3 SVP: 6 EC: I 5 6 7 PA: M 2 3 4 7

Dismantles, repairs, assembles, installs and adjusts roughing stands used in rolling mills:

Signals crane operator to position specified rolls in stands. Inserts rolls in housing, installs roll bearings, and bolts rolls in place, using hand tools. Assembles and installs specified guides on stands, using hand tools. Grinds guides, using portable grinder, to ensure smooth passage of steel through mill. Dismantles roll stands removed from line, and examines parts with measuring instruments, to determine need for replacement. Repairs and replaces unserviceable parts, and assembles roll stands. Sorts and stores roll stand equipment. Records size, quantity and condition of rolls.

May lubricate rolls by packing housings and bearings with grease.

8584-246 CHEMICAL-PROCESS-EQUIPMENT-MECHANIC DPT:684
HELPER(mech. equip., n.e.c.)

GED: 3 SVP: 5 EC: I 5 6 7 PA: H 2 3 4 7

Helps mechanic to repair, install and maintain process equipment in chemical plant:

Examines equipment for leaks or defective valves. Tightens flange connections and valves, using wrenches. Replaces driving belts, spray nozzles, gaskets and seals. Lubricates pumps and valves, using grease gun. Grinds and reseats valves, using power grinder. Dismantles and assembles equipment, using wrenches, portable power tools and rigging equipment to assist in repair and installation. Cleans dirt and rust from equipment and parts, using brushes, buffer and cleaning solutions. Tests equipment for leaks, using air hose and vacuum gauge. See also definition for term title, 02-160 HELPER (any ind.).

May repair piping systems, using pipefitter's hand tools. May operate welding equipment to repair broken or cracked parts, fill holes, and increase size of metal parts.

8584-248 STONE-SAW SETTER(cement, stone & clay) DPT:684

GED: 3 SVP: 5 EC: I 5 6 7 PA: M 4 7

Repairs or replaces stone-cutting blades in gangsaws:

Removes worn, bent and broken saw blades from gangsaws. Straightens blades, using hammer and anvil or block. Replaces removable diamond teeth on saws, using hand tools. Cuts blade stock to length, and cuts holes in ends to fit sawframe, using hand tools. Installs saw blades on gangsaws, and adjusts tension and spacing, using gauges and wrenches.

8584-250 LOOM-REED MAN(textile) DPT:684

GED: 3 SVP: 4 EC: I PA: M 4 7

Cleans, polishes and repairs loom reeds:

Cleans lint and gum from reeds with brush or air hose. Examines reeds for alignment of wires, rough edges, and breaks. Straightens and aligns bent wires, using hand tools, and solders broken wires. Smooths and polishes reeds, using pumice, lime, emery cloth, steel wool, and brush, according to condition of reed. Inspects new reeds, and stores them together with reconditioned reeds, according to size.

May record receipt and transfer of reeds. May replace defective reeds on loom.

8584-254 POWERHOUSE-REPAIRMAN HELPER(mech. equip.; n.e.c.) DPT:684

GED: 3 SVP: 4 EC: I 5 6 PA: H 2 3 4

Helps install, repair and maintain mechanical equipment and mechanical parts of machinery in electric-generating station:

Helps dismantle power-plant machinery, using hand and power tools. Replaces defective parts, and reassembles machinery, as directed. Lubricates recording instruments, such as meters and water gauges. Changes recording charts and refills ink containers on panelboard. Constructs scaffolds, using wood and metal poles. See also definition for term title, 02-160 HELPER (any ind.).

May operate metal-forming machines, such as punch press and drill press, to form machine parts and fittings.

8584-258 ROLLER COVERER(mech. equip., n.e.c.) DPT:684

GED: 3 SVP: 4 EC: I PA: L 4

Replaces worn covers on roller arbors of drawing, roving, and carding frames:

Cuts worn cot (cork or rubber covering) from roller arbor, and cleans arbor with solvent. Screws arbor guides into handpress, and turns knob to adjust press stroke, according to length of roller. Dips new cot into solvent solution to soften adhesive. Positions arbor and cot in press, and pulls lever to press cot onto arbor. Positions assembled roller between centres on buffing-machine carriage. Adjusts carriage stop on machine to reduce cot diameter to specified size. Starts machine, and turns handwheel to feed revolving roller against buffing wheel. Measures buffed roller with calipers to verify accuracy of diameter, and places roller in gauge to ensure that cot is not tapered. Presses wooden tool against ends of cot, as roller turns in lathe, to shrink cot onto arbor. Cuts cloth covering and glues it onto clearer-rollers that clean lint from drawing, roving and carding rollers.

May make or repair leather straps, bumpers, and binding for spinning frames, looms, carding machines and roving frames, using tooling knife. May make patterns in wood or leather for metal parts, using woodworking tools.

8584-262 SEWING-MACHINE-MECHANIC HELPER(mech. equip., n.e.c.) DPT:684

GED: 2 SVP: 5 EC: I PA: M 4

Helps mechanic to repair domestic and commercial textile sewing machines:

Helps lift machines onto work bench and disassemble parts, using hand tools. Cleans parts, using solvent and rags. Replaces defective parts and reassembles machines as directed. Starts machines by pressing foot pedal, and observes operation to test performance. Uncrates and assembles new machines, using hand tools. See also definition for term title, 02-160 HELPER (any ind.).

May adapt sewing machines to modify stitches, embroider designs, and apply trimmings by installing and adjusting attachments, using hand tools. May repair parts, using lathe and soldering iron.

8584-266 SPINNERET CLEANER(syn. fibres) DPT:584
jet cleaner.
GED: 2 SVP: 4 EC: I 7 PA: M 4

Cleans and stores jets (spinnerets) used on spinning machines that produce synthetic fibres by extrusion. Disassembles spinnerets, using hand tools. Cleans spinnerets by washing them in acid or acetone bath. Places parts in oven to dry, or dries with compressed-air hose. Examines holes in cleaned spinnerets for blockage, damage, or wear, using microscope. Reassembles satisfactory units, using wrench and jig. Keeps records of stock on hand, issued and cleaned. Reports any stock shortages. May dismantle candle filters, after soaking in acetone, and remove soiled filter paper. May buff surface of spinnerets with electric buffer. May keep inventory records.

8584-270 CIGARETTE-MACHINE-DRUM REPAIRMAN(mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: I PA: M 4

Adjusts and repairs cigarette-making-machine drums: Disassembles drums to remove parts for repair or cleaning, using hand tools. Examines and measures parts, such as bushings, to detect damage or wear. Soaks, or wipes parts with cleaning solvents, to remove glue and other residue. Reassembles drums with cleaned parts or installs replacement parts. Verifies clearance between knives, using gauges or micrometers. May remove drums from machines and convey them to repair room, using handtruck. May adjust or replace tobacco cut-off knives, using gauges and hand tools.

8584-274 LINERMAN(mech. equip., n.e.c.) DPT:684
liner repairman.
GED: 2 SVP: 4 EC: I 5 6 7 PA: H 2 3 4

Replaces metal liners in ore-processing equipment, such as mills, crushers, chutes and hoppers: Loosens worn liners, using wrenches and cutting torch. Operates power-chain hoist to remove old liner and position replacement, or signals crane operator to move liner. Fits and adjusts new liner, using hammer, pry bar, and hydraulic jacks. Bolts liner in place, using wrenches.

8584-278 WIRE REPAIRMAN(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: I PA: L 4 7

Repairs pile wires used on carpet looms: Examines wire for defective points and wear. Cuts defective ends or worn sections from wire, using metal snips. Welds corresponding length of metal to pile wire, using spot-welding equipment or hand torch. Traces outline of pile wires on metal strip, following pattern. Places wire in vise and files weld to smooth and shape wire according to tracing. Stores wires according to size and pattern design.

8584-282 FLYER REPAIRMAN(mech. equip., n.e.c.) DPT:684
flyer builder.
GED: 2 SVP: 3 EC: I PA: L 4

Repairs flyer wires for use on textile throwing, drawing and twisting machines: Collects damaged, dirty or rusted flyers from boxes near machines, and carries them to worktable. Removes wire arm from flyers, using wrench. Inserts and tightens new wires on hub, using wrench. Places repaired flyers into box. Records number and type of flyers repaired. May clean dirt and dust from flyers, using brush and cleaning oil.

8584-286 MILLWRIGHT HELPER(mech. equip., n.e.c.) DPT:684
mill-mechanic helper.
GED: 2 SVP: 3 EC: I 5 6 PA: VH 2 3 4

Assists millwrights to install, dismantle, and move machinery and supporting structures in an industrial or other establishments: Erects scaffolding and block and tackle. Builds forms and mixes cement for machine foundation. Melts and pours babbitt into bearing housing, using metal pot, blow torch and ladle. Moves materials, using handtruck, lift truck or hoist. Drills holes in steel, wood or cement, using portable electric drill. Measures, cuts and installs hangers, using

hand tools and ladders. Installs and dismantles machines and equipment, under close supervision of millwright, using crow bars, chain falls, hoists and wrenches. See also definition for term title, 02-160 HELPER (any ind.).

8584-290 ORE-PROCESSING-EQUIPMENT-REPAIRMAN HELPER(mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: B 5 6 PA: H 2 3 4

Helps repairman in repairing machinery and equipment used in processing and transporting ore: Cuts out worn parts of conveyor belts with shears. Draws ends of belt together, using block and tackle, and splices them with metal fasteners. Loosens sections of machines and equipment, such as vibrating screens, air compressors, conveyors, crushers, condensers and boilers, using hand tools and electric hoist. Removes worn pipe sections from air, oil, steam and water lines, using wrenches and chain hoist. Cleans soot and scale from water-cooling pipes of pressure boilers and slurry lines, using brush and air hose. See also definition for term title, 02-160 HELPER (any ind.).

8584-294 SHAKER REPAIRMAN(feed & flour mill) DPT:684
GED: 2 SVP: 3 EC: I 4 5 7 PA: H 2 3 4 7

Repairs shaker tables and reel frames used in processing corn products: Examines screen surface to detect weak spots and holes. Removes old bolting cloth, using hand tools. Measures and cuts new cloth, stretches it over panel, and tacks it in place. Tacks strip of reinforcing tape over edges, or folds edges of cloth to hold cloth securely. Repairs damaged wood frames and builds new ones, using carpenter's hand tools. Remounts reel frames on reels, using wrench and screwdriver, and replaces shaker tables on supporting springs.

8584-298 SIPHONING-HEAD CONDITIONER(non-ferrous metal) DPT:684
GED: 2 SVP: 3 EC: I 5 6 7 PA: H 4

Maintains siphon tubes used to transfer molten metal from melting furnace to holding furnace: Removes and dismantles furnace-transfer siphons, using hand tools. Visually examines siphon heads for pitting and metal residue lodged in siphon. Places dismantled sections of siphons in holding hearth to melt metal residue, using hoist. Cleans siphon, using rags and wire wheel. Assembles siphon, using nuts, bolts, asbestos gaskets and hand tools. Keeps record of siphon serviceability and hours in use.

8584-302 ANODE MAN(mech. equip., n.e.c.) DPT:684
pin puller.
GED: 2 SVP: 2 EC: I 3 5 7 PA: H 4 7

Removes, replaces and straightens studs from anode pots to condition them for re-utilization and to ensure continuous combustion of alumina, using pneumatic press and stud-pulling machine: Removes end-frames of pot to free exterior part of anode, using hooking stud. Opens pot doors to remove side frames, using bar. Pulls pins (studs) from anode to straighten or to remove scale, using hydraulic puller. Straightens, cleans and replaces studs in anode to ensure continuous combustion of alumina, using stud driver. Moves stud rack and pneumatic press in position, to perform straightening operation, using handtruck. Fills stud holes in anode with aluminum, using shovel. Removes aluminum from stud-pulling machine, and cleans working area, using air hose, broom and shovel. May be designated according to work performed; for example, Channel Man Stud Driver

8584-306 SIEVE REPAIRMAN(mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: I 7 PA: M 3 4

Makes and repairs sieves, used in machines that sift powder, such as flour and carbon black, using hand tools: Fits cloth lining and wire screen onto sieve frame, and staples lining and screen across frame. Places free-moving cloth pads in frame. Staples strips of cotton fabric around outer sides of frame so sieve fits correctly into recess of mounting plate. Removes and replaces defective or damaged sieves. May inspect filter bags and screens for holes or defects.

Farm Machinery
8584-326 through 8584-330

8584-326 DAIRY-EQUIPMENT REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: I 5 PA: M 2 3 4 6 7

Repairs and maintains dairy machinery and equipment, such as cream separators, milking machines, butter churns and pasteurizing equipment:

Observes and listens to machine in operation to locate causes of malfunction. Dismantles machine and repairs or replaces faulty parts, using hand and power tools. Assembles and starts machine to test its operation. Replaces defective wiring, burnt fuses, worn switches and electric motor parts. Fabricates metal parts and pipe lengths by cutting and fusing metals, using welding equipment. Threads and installs gas, steam, water and air pipes, using pipe-fitter's tools. Fabricates, alters, and installs sheet-metal chutes, covers, tubing, containers, and fittings. May affix special attachments and repair tension belts. May repair refrigerating systems, and test components; such as, electric motors, pumps, compressors, and water filters. May operate refrigeration equipment to cool refrigerating rooms.

8584-330 FARM-EQUIPMENT MECHANIC(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: B 5 6 PA: M 3 4 6 7

Repairs and overhauls, on farms or in repair shops, farm machinery, such as combines, tractors and movers:

Examines machinery and parts visually, listens for operational defects, and checks adjustments and tolerances, using precision-measuring instruments, test equipment and manufacturers' manuals. Repairs or replaces defective assemblies and parts, such as engines, fuel pumps, and generators, using hand tools, welding equipment, and chain hoist. Reassembles, adjusts and lubricates machines and equipment to manufacturers' specifications.

May assemble new farm machinery and equipment.

Material Handling Equipment
8584-350 through 8584-358

8584-350 MINE-HOIST REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: I 6 PA: H 2 3 4 7

Repairs and adjusts hoisting equipment used in mines:

Inspects components of hoisting equipment, such as motors, clutches, brakes, cables and safety devices to determine nature and location of defects. Dismantles equipment, and replaces or repairs defective parts, using hand and power tools and cutting torch. Assembles parts and adjusts components, such as brakes, controllers and clutches, using hand tools. Installs vertical track on mine walls for hoisting-machines.

8584-354 CRANE REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 7 EC: B 5 6 PA: M 2 3 4 7

Repairs and maintains cranes, according to manufacturers' specifications and operation manuals:

Examines cranes and related equipment for signs of wear or other defects. Dismantles equipment to remove damaged cables, wheels, gears, brakes, axles, pulleys and hoist drums or other parts, using hand and power tools and precision-measuring equipment. Reads drawings to determine parts required and correct alignment of moving components. Makes load-tests of overhead crane by hoisting loads heavier than rated capacity. Installs replacement motors.

May perform duties of crane operator when required. May repair a particular type of crane and be designated accordingly; for example, Tractor-Crane Repairman(construction)

8584-358 CONVEYOR REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: B 5 PA: M 2 3 4 7

Repairs and adjusts conveyor systems:

Diagnoses mechanical defects in conveyor systems, by visually examining parts for signs of wear. Installs belts and pulleys, and adjusts tension rolls to specification, using wrenches. Aligns roller tracks, cables and belts, to prevent malfunctions, using hand tools, levels and gauges. Fills gearboxes with lubricant, to specified level, and lubricates moving parts, using hand gun.

May repair cracks or fractures in metal parts of conveyor system, using welding equipment. May install, set-up and test-operate new conveyor systems, following diagrams and using hand tools and material handling equipment, such as crane or fork-lift truck.

Construction Equipment
8584-378 through 8584-398

8584-378 CONSTRUCTION-EQUIPMENT MECHANIC(mech. equip., n.e.c.) DPT:261
mobile-equipment repairman.
GED: 4 SVP: 7 EC: B 5 7 PA: H 3 4 6 7

Repairs, rebuilds and adjusts heavy mobile equipment, other than internal combustion engines, such as cranes, power shovels, scrapers, graders, powered conveyors, trench-digging machines and bulldozers: Listens to or observes equipment in operation to assist in locating fault. Inspects machines at intervals for worn or damaged parts, according to maintenance schedule for each machine. Dismantles equipment, using hoist and hand tools, to gain access to defective parts. Cleans and examines parts for damage or excessive wear. Verifies dimensions of parts, such as shafts, bearings, bushings, pins, gears and rollers by gauging or measuring with calipers or micrometers to ensure compliance with manufacturers' specifications. Repairs or replaces broken or worn parts, using mechanic's hand and power tools and welding equipment. Makes necessary adjustments to ensure efficient operation. Directs helpers engaged in disassembly, cleaning and assembly of machinery.

May be required to estimate maintenance, repair or replacement costs of equipment. May specialize in making field repairs to equipment sufficient to resume operations but not including major overhaul or rebuilding, or specialize in the repair of a particular type of equipment and be designated accordingly; for example,

Field Mechanic
Power-Shovel Mechanic

8584-382 DIESEL MECHANIC(mech. equip., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: I 5 6 PA: H 3 4 6 7

Repairs and maintains diesel engines used to power a wide variety of industrial, farm and construction machinery:

Observes and listens to equipment in operation and reads meters and gauges to diagnose malfunction. Disassembles engines and examines parts for defects and excessive wear. Replaces parts, such as pistons, rings, bearings, gears, valves, and bushings, using valve-grinding machine, and hand tools. Replaces and adjusts parts, such as valves, gears, and carburetors, to specified tolerances, using hand and power tools and precision-measuring instruments. Directs helper to disassemble engine, clean parts and reassemble engine. Orders replacement parts from parts catalogue. Writes reports, indicating data, such as nature and extent of repair.

May grease engine and auxiliary equipment, using grease gun.

8584-386 DIESEL-MECHANIC HELPER(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 5 EC: I 5 6 PA: H 3 4

Helps mechanic to repair and maintain diesel engines used to power a wide variety of industrial, farm and construction machinery:

Helps diesel-engine mechanic to disassemble engine, clean parts and re-assemble engine, using hand and power tools and cleaning materials. Obtains parts and material from stock room, using hand cart, hoist or crane. Holds engine parts in position for assembly, and hands tools to mechanic. See also definition for term title, 02-160 HELPER (any ind.).

May machine parts, using drill and grinder.

8584-390 CRAWLER-TRACK REPAIRMAN(mech. equip., n.e.c.) DPT:664
track repairman.
 GED: 3 SVP: 4 EC: I 5 PA: M 4 5 7

Disassembles and assembles press-fitted, crawler-track links for construction equipment, such as cranes, power shovels and tractors, using horizontal-arbor press:

Directs workers engaged in placing and removing crawler tracks. Removes or tightens bolts fastening track pads to track links, using pneumatic impact wrench. Reads chart to select specified insert jaws, and disassembly and assembly rams. Installs rams in arbor press sockets, using wrench. Moves levers to position track over insert jaws, and to advance or retract rams that press pins and bushings into sockets on track links. Directs other workers engaged in removing or positioning track pads, track links, pins, and bushings, using press. Operates press to disassemble and reassemble track, and to replace worn or damaged pins and bushings. Removes pins from bushings, using cutting torch or hammer and chisel.

8584-394 CONSTRUCTION-EQUIPMENT-MECHANIC HELPER(mech. equip., n.e.c.) DPT:684
mobile-equipment-repairman helper.
 GED: 2 SVP: 3 EC: B 5 7 PA: H 3 4

Assists mechanic to maintain and repair mobile construction equipment, such as cranes, compressors, trucks, tractors, bulldozers and power shovels:

Installs jacks and hoists to raise equipment and lift dismantled assemblies. Disassembles and assembles machinery, using power wrenches and hand tools. Cleans parts with naphtha, gasoline or other cleaning solution. Lubricates and greases machines. See also definition for term title, 02-160 HELPER (any ind.).

May be designated according to worker helped; for example, Field-Mechanic Helper

Power-Shovel-Mechanic Helper

8584-398 CRAWLER-TRACK-REPAIRMAN HELPER(mech. equip., n.e.c.) DPT:687
track-repairman helper.
 GED: 2 SVP: 3 EC: I 5 PA: H 4

Helps repairman to disassemble and assemble crawler tracks for mobile construction equipment, such as cranes, power shovels and tractors:

Helps disassemble and reassemble track pads and track links, by removing track pads, links, pins, and bushings, using hand tools or press. Cleans parts to remove rust, dirt and grease, using solvent and rags. Helps lift and move track and heavy parts. See also definition for term title, 02-160 HELPER (any ind.).

8585-BUSINESS AND COMMERCIAL MACHINE MECHANICS AND REPAIRMEN

This unit group includes occupations concerned with repairing and maintaining business and commercial machines; such as, typewriters and calculating, accounting, card-punching, duplicating and adding machines. Activities include: replacing worn or damaged parts and adjusting inter-related parts to synchronize their operations, using hand and power tools and gauges.

8585-110 MAIL-PROCESSING-EQUIPMENT MECHANIC(mech. equip., n.e.c.) DPT:281
 GED: 4 SVP: 7 EC: I PA: M 4 7

Repairs and maintains mail-processing equipment, such as letter-cancelling machines, mail-sorting machines, and conveyor systems, using hand and power tools:

Inspects machines for signs of wear or malfunction. Dismantles faulty machinery and related equipment. Repairs or replaces defective parts, such as gears and bearings, or fabricates replacement parts, using machine-shop equipment, such as lathe, drill press, wet-band- metal saw and welding equipment. Modifies equipment according to

specifications. Reassembles and starts machines to test their performance. Repairs hydraulic and pneumatic systems. May install new machines and related equipment.

8585-114 REPAIRMAN, PUNCHED-CARD MACHINES(electronic equip.) DPT:281
repairman, punched-card-office machines.
 GED: 4 SVP: 7 EC: I PA: M 4 7

Repairs and maintains collating, sorting, card reading, key-punch, and other punched-card-office machines, using hand and special tools and test equipment:

Assembles and installs machines, following wiring diagrams. Operates and examines faulty machines to determine nature and location of electrical and mechanical defects. Dismantles machines to repair or replace parts, such as belts, gears, bearings and shafts. Reassembles and operates machines, using prepunched cards to verify correct operation. Observes and listens to operation of moving parts, measures clearances and contact gaps, using gauges, and measures voltages and continuity, using electrical-test equipment. Adjusts clearances of moving parts, electrical-contact gaps, and alignment of printing units and contact-brush units to meet specifications. Cleans and oils moving parts.

May set up machines to obtain particular information, by wiring and inserting circuit-boards in machines, and moving switches and levers. May give instruction in operation and care of machines to machine operators.

8585-118 OFFICE-MACHINE SERVICEMAN(mech. equip., n.e.c.) DPT:281
 GED: 4 SVP: 6 EC: I PA: L 4 6 7

Repairs and maintains office machines, such as accounting, adding and calculating machines, and typewriters:

Operates machines to test moving parts, and listens to sounds of machines to locate causes of malfunction. Disassembles machines and examines and measures parts, such as gears, guides, rollers, and pinions for wear and defects, using micrometers. Repairs, adjusts, or replaces parts, using hand and power tools, and soldering equipment. Bends, grinds, and taps parts to correct binding, looseness, and misalignment. Incorporates modifications to update machine, or adds special features to machine ordered by customer. Cleans and oils moving parts.

May give instructions in operation and care of machines to machine operators. May assemble new machines. May specialize in repairing one type of machine and be designated accordingly. Typewriter Serviceman

8585-122 SERVICEMAN, DICTATING AND TRANSCRIBING MACHINES(mech. equip., n.e.c.) DPT:281
 GED: 4 SVP: 6 EC: I PA: L 4 6 7

Repairs and maintains magnetic tape and grooved-tape-dictating and transcribing machines:

Tests machines to isolate defective circuits, using wiring diagrams and electronic-testing equipment. Replaces faulty parts, such as tubes, transistors, microphones, relays, and resistors, using soldering equipment and hand tools. Replaces or adjusts mechanical elements, such as playback mechanisms, remote control switches and tape reels. Operates repaired machines to test their performances.

May be designated according to type or trade-name of machine repaired.

8585-126 CASH-REGISTER SERVICEMAN(mech. equip., n.e.c.) DPT:281
 GED: 4 SVP: 5 EC: I PA: H 4 7

Repairs and maintains cash registers:

Examines mechanical assemblies, such as printing mechanisms, counters, and keyboards, to determine nature and location of defects. Removes and replaces defective parts, using hand tools and soldering equipment. Tests electrical controls, wiring, and motors, for insulation breakdown, using insulation resistance measuring equipment. Cleans and lubricates moving parts.

May repair defective parts by reshaping them on bench lathe or grinder.

**8586-INSPECTING AND TESTING OCCUPATIONS,
EQUIPMENT REPAIR, N.E.C.**

This unit group includes occupations in inspecting and testing work, as described under the term titles, 02-170 INSPECTOR (any ind.) and 02-430 TESTER (any ind.), concerned with quality control activities in the repair and servicing of mechanical equipment.

8586-110 AIRCRAFT INSPECTOR, REPAIR(air & space-craft) DPT:281
GED: 4 SVP: 8 EC: B 5 6 PA: M 2 3 4 7

Inspects airframes, engines, and operating equipment of aircraft in all stages of repair to ensure that repairs are made in compliance with standards and specifications designated on drawings and in manuals: Tests tightness of airframe connections, using hand tools. Examines fit of parts, using flashlight and mirror, and checks disassembled units for wear, cracks, splits and other evidence of internal damage, using precision measuring equipment, to ensure specified tolerances have been met. Manipulates aircraft controls to check action. Examines components for correct assembly and reviews results of shop tests. Checks installed equipment for function and adjustment in aircraft. Records data, such as engine performance, during test runs. Checks work records and lists, to verify that required work and inspections on aircraft have been completed, and prepares certifications. Sends parts, which are suspect, for special testing. May certify airworthiness of completed aircraft. May prepare overhaul schedules for aircraft. May examine aircraft wreckage, and study maintenance records to determine causes of accidents. May destroy faulty parts, using hand tools.

8586-114 LOCOMOTIVE INSPECTOR(rail. rolling stock) DPT:281
GED: 4 SVP: 8 EC: I PA: L 2 3 4 7

Inspects railroad locomotives in shop to determine extent of wear and needed repairs, and to ensure conformance with standards: Examines firebox, journal boxes and bearings to detect wear. Strikes areas, such as rods, wheels and bolts with hammer to detect ruptures or cracks. Measures wheel flanges with calipers and depth gauge to detect excessive wear or flat spots. Inspects and tests locomotive engine and components, and mechanical, hydraulic, pneumatic and structural elements or systems, using drawings and test equipment, to ensure conformance with established standards. Reports defects to maintenance personnel and authorizes removal of locomotive from service until repairs have been made.

8586-118 INSPECTOR, HEAVY EQUIPMENT(mech. equip., n.e.c.) DPT:283
GED: 4 SVP: 8 EC: O 5 PA: L 2 4 6 7

Inspects and tests construction and mining machinery and equipment, such as tractors, bulldozers, cranes, power shovels, graders, scrapers and conveyors to determine operating condition and needed repairs: Starts equipment, listens to motor, and test-operates machinery to analyze performance. Determines if equipment should be taken out of service for overhaul, considering project requirements, time lost and availability of spare equipment. Estimates time required and cost of repairs, and prepares work order for maintenance personnel. Test-drives equipment after repair, and records information on equipment performance charts.

8586-122 INSPECTOR AND TESTER, METEOROLOGICAL EQUIPMENT(scient. & ind. equip., n.e.c.) DPT:261
GED: 4 SVP: 7 EC: B PA: M 4 7

Inspects, installs, repairs and calibrates meteorological equipment, such as thermographs, barographs and anemometers, at airports and weather stations: Consults with meteorological office officials to obtain information on equipment serviceability. Visually examines equipment, such as barographs, thermographs and anemometers, to detect physical defects or mechanical malfunction. Tests mechanical operation of graph recording devices, following equipment specifications and manuals and using mechanical-test equipment. Lubricates moving parts of anemometer-rotating-cup mechanism, using specified lubricants. Removes and replaces defective bearings and shafts of

anemometers, and mechanical parts of graph recording devices. Checks barometers, hygrometer and thermograph readings against readings obtained with standard-type instruments and recalibrates instruments. Checks ceiling projector for alignment and focus, using spirit level. Checks precipitation gauge mounting, using level. Removes and replaces equipment requiring major overhaul. Modifies equipment to latest configuration to improve equipment performance and reliability. Recommends installation of new equipment. Prepares inspection reports and records findings.

8586-126 TESTER, AUTOMOTIVE VEHICLE(motor vehicle) DPT:261
GED: 4 SVP: 7 EC: I PA: L 3 4 5 6 7

Examines and tests automotive vehicles, such as automobiles, buses and trucks, to determine need for and cost of repairs: Reads work order and talks with customer regarding vehicle's performance. Starts engine of automotive vehicle and listens for indication of malfunction. Road tests vehicle to determine defects in parts and assemblies; such as, steering, braking, transmission and suspension units. Tests motor timing, cylinder compression, fuel consumption, wheel alignment and steering, using timers, pressure gauges and wheel alignment equipment. Examines engine and auxiliary systems, such as fuel, ignition, cooling, generating and hydraulic systems to determine adherence to specifications, using feeler gauge, pressure gauges and other testing devices. Operates electrical and hydraulic systems and equipment to evaluate their performance. Examines vehicle body for scratches and dents. Estimates cost of repair and prepares itemized listing of cost of parts and labour. May examine disassembled engine, differential gear or other parts during repair. May test-drive vehicle on completion of repairs.

8586-130 AIRCRAFT-ENGINE TESTER(air & space-craft) DPT:281
GED: 4 SVP: 7 EC: I 5 PA: M 3 4 7

Tests performance of aircraft engines after overhaul: Positions or directs other workers in positioning engine, with aid of chain or power hoist, on test stand. Inspects connections of oil and fuel lines, instruments, controls, and installation of engine accessories, such as generators, magnetos, and fuel injectors. Connects test instruments, such as dynamometers and manometers, to engine. Starts engine and inspects for fuel or oil leaks. Operates engine for specified time, at various throttle and mixture settings, according to manufacturer's maintenance and overhaul instruction manual. Reads and records test data, such as revolutions per minute, manifold pressure and temperature, and oil pressure. Compares engine performances at various speeds, using performance charts and manufacturer's performance standards. Certifies that tested engines are ready for service or indicates reasons for their rejection.

8586-134 AIRCRAFT-HYDRAULICS TESTER(air & space-craft) DPT:281
hydraulic tester.
GED: 4 SVP: 7 EC: I PA: M 3 4 7

Tests the mechanical functioning of aircraft-hydraulic units and systems: Connects hydraulic units and systems to test panels, and attaches ancillary equipment, such as hoses, valves, gauges and mechanical and electrical control devices at designated locations, using hand tools. Starts pump that forces liquid through unit or system at various pressures to test for leaks. Manipulates controls to test operation of units and systems under various conditions. Records test results. Evaluates test data to determine causes of malfunctioning of hydraulic units and systems and makes adjustments and repairs. May install hydraulic units and systems in aircraft.

8586-138 MAINTENANCE ANALYST(mech. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: I PA: L 4 7

Investigates cause of mechanical failures of operating, maintenance and related equipment, and recommends corrective measures: Studies shop and purchase records to determine frequency of recurring malfunctions. Reviews maintenance manuals, manufacturers' catalogues, drawings, and other references, for specifications and

performance information. Observes operating conditions of equipment and machines where excessive breakage and defects in products occur, utilizing testing and measuring devices and instruments, to collect data. Verifies that equipment design and material and processing techniques conform to standards. Determines corrective measures and writes report of findings and recommendations. Prepares drawings for recommended design changes in equipment, machines or parts.

May compute labour and equipment repair costs. May investigate and report on design suggestions for replacement of worn-out machinery.

8586-142 RAILWAY-CAR INSPECTOR(rail. rolling stock) DPT:281
car inspector.
GED: 4 SVP: 7 EC: B PA: M 2 3 4 7

Inspects railway cars, such as passenger, sleeper, dining and freight cars for structural defects, and tests equipment for efficient operation, performing any combination of the following duties:

Inspects cars for damage; such as, broken windows, defective locks, worn or damaged seats and malfunctioning rest room facilities. Examines car roof, ice hatches, brake beams, doors and floor for structural defects. Inspects food storage equipment for satisfactory operation and cleanliness. Inspects sleeping cars to determine structural condition of berths. Turns on controls of passenger car systems, such as heating, lighting, water and ventilation, to check efficiency of operation. Turns handwheel to test brakes. Inspects and checks airhoses for leakage. Opens journal boxes to determine that they are filled with oil. Places flags in front and rear of train to warn other workers that inspection is being performed. Prepares inspection report and notifies other workers if damage requires car to be removed for repair.

May be designated according to type of car inspected; for example, Freight-Car Inspector
Passenger-Car Inspector

8586-146 INSPECTOR, BUS PARTS(motor vehicle) DPT:281
GED: 4 SVP: 6 EC: I 5 PA: M 4 7

Inspects new and used bus parts for conformance to company's specifications, to ensure quality control of parts used in repair of buses:

Examines used metal parts to determine if they should be repaired or scrapped. Examines broken and worn parts to determine nature and cause of defects. Measures new and used parts to verify specified dimensions, using measuring tools, such as micrometers, calipers, scales and gauges. Forwards parts to laboratory for hardness tests and analysis, to repair shop, or to purchasing and stores department for sale as scrap. Records inspection data, such as parts inspected, types of defects, and disposition of material on quality control report.

8586-150 WHEEL-AND-AXLE INSPECTOR(rail. rolling stock) DPT:281
wheel inspector.
GED: 4 SVP: 6 EC: I 5 PA: L 3 4 7

Inspects railway-car axles and wheel assemblies for defects, and for conformance to specifications:

Verifies diameter of wheel and journal seats on axle, using calipers and micrometers. Measures space between wheels and from center of axle to each wheel, using fixed-clearance gauge and needle-pointed space gauge to verify conformance to specifications. Measures wheel flange for wear, using micrometer. Observes pressure-gauge indicator on wheel-pressing machine, as wheels are pressed onto axles, to ensure conformity to tolerances. Examines and feels surface of wheels for cracks and wear and strikes wheel with hammer and listens to sound to detect flaws in metal. Marks defective area with chalk or paint. Prepares reports describing defects in wheels and amount of wear in wheel flange with recommendations for repair or disposal.

8586-154 GAS-METER TESTER(scient. & ind. equip., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: B PA: L 4 7

Tests accuracy of gas flowmeters for conformance to specified requirements:

Changes recording charts on gas flowmeters. Inserts measuring orifice between metal pipe sections, and bolts sections together. Fastens one end of pipe to gas main leaving flowmeter, and attaches rubber hose

to discharge end of pipe to deflect air currents. Sets frame containing manometer instruments on tripod, and connects instruments to nipples on pipe and to flowmeter with rubber tubing. Reads instruments to obtain data, such as specific gravity and temperature of gas, and clocks number of seconds required for specified volume of gas to pass through meter. Determines accuracy of meter by mathematical computations based on readings, clocking tests and standard data stamped on orifice disk, and verifies calculations by use of tabulated charts. Adjusts meter settings to correct inaccurate meters.

May dismantle, clean, repair and pressure-test regulators. May modify regulators to specific requirements.

8586-158 PRESSURE-CONTROL CALIBRATOR(scient. & ind. equip., n.e.c.) DPT:684
calibrator, pressure.
GED: 3 SVP: 4 EC: I PA: L 4 7

Tests accuracy of pressure-activated controls (valves):

Seats controls in holding fixture, and couples air-pressure lines to capillary tube of control. Opens air valve and observes action of scale pointer on graph. Compares reading of scale pointer with reading on pressure gauge to verify accuracy of control. Turns screws or fits plunger-rod pin to alternate positions to calibrate control to specifications. Records calibration settings of control units.

8586-162 TANK-CAR INSPECTOR(rail. rolling stock) DPT:684
GED: 3 SVP: 4 EC: B 6 PA: M 2 3 4 7

Inspects and services railway-tank cars used to transport refinery products, such as oil, liquid chemicals and liquified gases, performing any combination of the following duties:

Inspects wheels, bearings, brakes and safety appliances for defects. Replaces defective components, such as brake-rod pins, and safety and flow-control valves, using hand tools. Tightens safety appliances, and packs bearings and journal boxes with grease. Examines valves, plugs and tank seams for leaks, and seals leaks, using calking gun. Removes residual gas from used tank cars by connecting flexible hose from suction line to car and opening valves on car and blowoff line. Visually inspects car interior for defects and cleanliness, by passing light into car and viewing it through valve openings or by personally entering car through dome. Washes interior of tank with water and dries it with steam. Routes cars requiring major repairs to maintenance shop. Prepares serviceability reports on tank cars and approves cars for specified usage.

May couple pipes between tank-car-drains and appropriate storage tanks.

8586-166 REFRIGERANT-GAS-LEAK TESTER(mech. equip., n.e.c.) DPT:684
GED: 3 SVP: 3 EC: I PA: L 3 4 7

Tests refrigeration units for refrigerant leaks by any of the following methods:

1. Sets balance and range of electronic leak-tester by turning control knobs. Moves nozzle of tester along refrigerant lines, condenser and compressor, and listens for buzzer or observes signal light indicating presence of gas. Adjusts controls to narrow range of tester and probes area to pinpoint exact location of leak. 2. Turns valve of gas tester to adjust flow of gas to copper flame-ring and ignites gas. Moves suction hose, joined to flame-ring along surfaces of refrigeration unit and observes flame for change in colour denoting presence of leaking refrigerant gas. 3. Wraps wet litmus paper around joints of refrigeration unit and observes paper for colour change indicating refrigerant leak. Marks number of defective part or joint on inspection tag, according to drawing numbering chart and attaches tag to unit. Records number and location of leaks on inspection chart.

May charge refrigeration unit receiver tanks with refrigerant gas to specified pressure in preparation for test. May repair leaks detected during test, using soldering torch.

8586-170 HEDDLE EXAMINER(mech. equip., n.e.c.) DPT:687
frame changer.
GED: 2 SVP: 2 EC: I PA: L 4 7

Examines, reconditions and sorts heddles onto frame for use in drawing-in machine:

Examines heddles for rust, using magnifying glass, and measures

heddle dimensions, such as length, width, and eye spacing, for conformance with specified tolerances, using gauge. Polishes and straightens heddles, using abrasive paper, steel wool, and pliers. Separates right and left heddles and transfers them onto rods according to size and type. Counts specified number of heddles for use in drawing-in machine.

**8586-199 OTHER INSPECTING AND TESTING
OCCUPATIONS, EQUIPMENT REPAIR**

This group includes mechanical equipment inspectors and testers, not elsewhere classified; for example, those who inspect diesel and gasoline trucks for the presence of accessories prescribed by law. A typical example of an occupational title covered by this residual group is:

Truck-Accessories Checker(motor trans.)

8587-WATCH AND CLOCK REPAIRMEN

This unit group includes occupations concerned with repairing watches and clocks and mechanical movements used in clockwork-operated devices, such as timers, meters and recorders. Activities include: replacing parts, adjusting, calibrating and refinishing, using common and special hand tools, machines and equipment.

8587-110 WATCH REPAIRMAN(scient. & ind. equip., n.e.c.)
DPT:281

clock repairman; watch adjuster; watchmaker.

GED: 4 SVP: 7 EC: 1 PA: S 4 7

Repairs, cleans, and adjusts mechanisms of instruments, such as watches, time clocks, and dial indicators:

Examines faulty timepiece to discover malfunction, using magnifying glasses. Removes defective parts, such as balance staff, wheels and hairspring, using watchmaker's hand tools. Removes broken and damaged screws, and taps screw holes. Cleans parts with benzine or other cleaning substance. Trues balance wheel and hairspring, and corrects overcoiling of hairsprings, using tweezers. Replaces damaged components; such as, mainsprings, jewels, stems, escape wheel, and pinions. Observes minute parts with aid of loupe, and makes fine adjustments to assembly to obtain proper play among parts. Lubricates moving parts. Places mechanism in demagnetizing machine that automatically removes magnetic properties from mechanism. Regulates timepiece movement, testing it in various positions, using watch-rate recorder.

8587-114 TAXIMETER REPAIRMAN(mech. equip., n.e.c.)
DPT:681

GED: 3 SVP: 6 EC: 1 PA: L 4 7

Repairs, cleans and adjusts taxicab meters:

Disassembles and inspects meters to determine cause of incorrect or non-registration of time, mileage, or fare. Cleans meters, using vacuum cleaner or compressed air blower. Repairs or replaces broken or worn parts, and adjusts registering-mechanism gears, using hand tools. Reassembles meters and makes final adjustments to registering-mechanism-control gear to meet specifications.

May test, service and repair parking-meter-clock mechanisms.

8587-118 PARKING-METER SERVICEMAN(scient. & ind. equip., n.e.c.)
DPT:384

parking-meter repairman.

GED: 3 SVP: 4 EC: 0 PA: L 4 7

Inspects, services and repairs parking meters:

Winds meters according to schedule, and adjusts mechanisms. Repairs or replaces worn or damaged parts, using hand tools. Straightens meter standards, using wrenches. Replaces broken glass in meter face. Cleans parts with carbon tetrachloride or gasoline and oils them. Keeps records of machine service histories to assist in scheduling preventive maintenance inspections or replacing worn out meters.

8587-122 CASER(scient. & ind. equip., n.e.c.)
DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4

Inserts clock and watch movements into new or repaired cases:

Removes watch movement from damaged case, using hand tools. Blows dust and dirt out of back of new or repaired case, using air hose. Inserts movement into case and screws case in place, using hand tools. Winds timepiece by rubbing crown against strip of plastic, or pressing revolving plastic cup against crown. Sets timepiece to correct time preparatory to testing.

**8588-PRECISION INSTRUMENT MECHANICS AND
REPAIRMEN**

This unit group includes occupations concerned with installing and repairing scientific, engineering, optical and medical instruments and apparatus, and photographic, meteorological, and similar equipment. Activities include: disassembling, replacing, adjusting, calibrating and refinishing instruments and instrument parts, using common and special hand tools, machines and equipment.

8588-110 AIRCRAFT-INSTRUMENT MECHANIC(scient. & ind. equip., n.e.c.)
DPT:261

instrument technician, aircraft.

GED: 4 SVP: 7 EC: 1 PA: L 4 7

Repairs, modifies and bench-tests aircraft instruments used for measuring, controlling and indicating physical characteristics, such as temperature and pressure:

Tests instruments; such as, gyroscopic controlled turn-indicators, rate of climb indicators, auto-pilots, pressure regulating valves, servomechanisms, and fuel, temperature or oxygen indicators, using electrical and electronic test equipment, micrometers, pressure gauges, and vacuum-pump testers. Records test results and diagnoses cause of malfunctions from findings. Disassembles faulty instruments, using hand tools and loupe. Replaces defective or worn parts, such as pivots, shafts, and bearings. Burnishes and laps new shafts and other parts, using jeweler's lathe, precision grinder, and lapping machine. Modifies units to latest design specifications by replacing components detailed on modification instruction sheet. Adjusts components to revised tolerances, by reshimming or replacing components. Magnetizes or demagnetizes parts as required, using special shop equipment. Cleans, repaints, and lubricates parts. Reassembles and tests instruments for conformity with operating specifications.

8588-114 INSTRUMENT MECHANIC, UTILITIES(scient. & ind. equip., n.e.c.)
DPT:261

GED: 4 SVP: 7 EC: 1 5 PA: L 2 3 4 7

Adjusts, repairs and maintains electrical and mechanical metering instruments in electric-power generating station:

Inspects gauges and meters used to indicate conditions; such as, temperature, pressure, flow, volume and consumption. Visually observes dials or graphic charts for indications of abnormal or erratic fluctuations. Disconnects and removes defective instruments and installs new ones. Tightens loose connections on panel board, using hand tools. Evaluates wear and obsolescence of defective instruments and determines if they warrant repair. Repairs and adjusts instruments, such as telemetering and remote control devices. Tests electrical wiring of panel, using electrical test equipment. Repairs electric clocks and electrical timing devices found in electric meters. Engraves identification tags for electric-power- utility equipment, using portable electric engraver.

8588-118 INSTRUMENT REPAIRMAN(scient. & ind. equip., n.e.c.)
DPT:261

instrument man.

GED: 4 SVP: 7 EC: 1 5 PA: L 3 4 7

Installs, repairs, maintains and adjusts indicating, recording, telemetering and controlling instruments used to measure and control variables, such as pressure, flow, temperature, motion, force and chemical composition:

Disassembles malfunctioning instruments, and examines and tests

mechanism and circuitry for defects. Troubleshoots equipment, in or out of control system, replaces or repairs defective parts, and cleans filter screens and dirt traps on instrument pipe lines. Reassembles instruments and tests assembly for conformance to specifications, using test instruments; such as, potentiometers, resistance bridges, manometers and pressure gauges. Adjusts spring-loaded screw-down calibrating and variation-limiting devices in thermograph instruments. Conducts periodic inspections and makes minor calibration adjustments to ensure functioning within specified standards. Adjusts and repairs final control mechanisms, such as automatically controlled valves or positioners on equipment, such as heat exchangers, for heating units and solution-preparing equipment. Orders necessary spare parts and charts or equipment to complete work assignments. Records equipment inspected and repaired, indicating department concerned, instruments inspected, and date and nature of inspection. Instructs plant personnel in correct and safe operating procedures for various instruments.

May repair a specific type of instrument, and be designated accordingly; for example,

Meter Serviceman

Panel-Instrument Repairman

8588-122 SURVEYING-AND-OPTICAL-INSTRUMENT REPAIRMAN(scient. & ind. equip., n.e.c.) DPT:261
surveying-and-optical-instrument technician.
GED: 4 SVP: 7 EC: 1 PA: M 4 7

Repairs, cleans and adjusts precision instruments, such as surveying, optical, and photogrammetric instruments:

Disassembles precision instruments, using hand tools, tweezers, gauges and jigs. Cleans optical parts with ether, and metal parts with varsol, carbontetrachloride, naptha gas or alcohol. Replaces broken or worn parts. Removes defects, such as burrs, from gears of rack and pinion mechanisms, using oil stone, and laps vertical axis. Resets devices; such as, clamping, tilting and slow-motion screws, circle-reading microscope, and mask-fine-reading scale, to manufacturer's specifications. Overhauls and adjusts assemblies, such as diagram-circle housing, telescope, and optics, using hand tools and special tools. Lubricates equipment with all-season lubricant. Fabricates or modifies equipment for special requirements, using machine shop equipment, such as lathe, milling machine and grinder. Reassembles and adjusts instruments by focusing instrument on fixed target or against a collimator, and setting dial readings on instrument to correspond to manufacturer's specifications.

8588-126 CAMERA REPAIRMAN(scient. & ind. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: 1 PA: L 4 7

Repairs and adjusts cameras, movie projectors and associated equipment, such as exposure meters:

Dismantles camera and related equipment, using hand tools, to examine and determine nature and location of defect. Replaces defective parts and fabricates or modifies parts as necessary, using bench lathe, grinder, drill press and precision tools. Tests and aligns diaphragm, lens mount, and film transport to adjust lens focus and minimize optical distortion, using precision gauges. Adjusts range and view finders, using fixed focusing target. Calibrates operation of shutter, diaphragm, and lens carrier with dial settings, according to manufacturer's specifications, using electronic or stroboscopic timing instrument.

8588-130 PHOTO-FINISHING-EQUIPMENT REPAIRMAN
(scient. & ind. equip., n.e.c.) DPT:281
GED: 4 SVP: 7 EC: 1 PA: L 3 4 7

Adjusts and repairs photo-finishing equipment:

Examines automated, semi-automated, and manual-processing equipment; such as, cine and still-developing machines, slide-mounting machines, continuous-printing machines, enlargers, driers and mounting presses. Replaces defective or broken metal parts by making replacements, using metalworking and machine tools. Makes physical repairs, such as cleaning and tightening connections, soldering and welding broken metal parts, and bending and installing pipes. Adjusts speed and timing of automated processes according to tolerances required for quality control, using timing meter and hand tools. Checks and lubricates moving parts of machinery according to equipment maintenance schedules. Requisitions parts and materials.

May repair electronic circuitry in malfunctioning equipment, such as automatic-colour printers and video analyzers.

8588-134 GAS-METER REPAIRMAN(scient. & ind. equip., n.e.c.) DPT:261
GED: 4 SVP: 6 EC: 1 PA: M 4 7

Inspects, tests, repairs and adjusts residential and industrial gas meters:

Examines work ticket and performs appropriate tests to determine cause of meter malfunction, such as leaking valves or ruptured diaphragm. Removes top, front and back plates of meter case to gain access to internal working parts. Dismantles and repairs diaphragm assembly, gear assembly and recording mechanism. Soaks meter parts in acid or other solvents to remove deposits of tar or corrosion accumulated on surfaces of parts exposed to gas. Reassembles meter with new or reconditioned parts; such as, toe-plates, cranks, crank-arms, worm-gears, spindle shafts and indexes, using a variety of hand tools. Adjusts components, such as valves and valve-motion mechanisms to conform to specifications. Tests meters to detect leaks around gaskets and housings. Verifies accuracy of registration, using meter-calibrating equipment. Adjusts, calibrates and repairs meter-testing equipment. Instructs and directs work of helpers.

May install gas meters and regulators or repair special meters and be designated accordingly; for example,
Gas-Meter Installer
Special-Meter Repairman

8588-138 GYROSCOPE REPAIRMAN(scient. & ind. equip., n.e.c.) DPT:281
GED: 4 SVP: 6 EC: 1 PA: L 4 7

Repairs gyroscopes, using hand tools and following wiring diagrams:

Dismantles faulty gyroscopes to ascertain nature and location of defects. Unsolders and disconnects necessary wires to disassemble gimbal (stabilizer). Removes ball bearings from pivots of gimbal. Washes ball bearings in cleaning solvent and dries them with jet of warm air from hose. Replaces ball bearings in pivots and inserts shims between bearings and retainer plate to fill space and keep play of bearings within acceptable limits, using dial gauge. Resolders connecting wires to terminals of gyroscope, using soldering iron. Tests reassembled gyroscope in simulated working conditions by mounting gyroscope in jig and positioning it at various angles.

May test continuity of electronic-control circuitry, using ohmmeter.

8588-142 WATER-METER REPAIRMAN(scient. & ind. equip., n.e.c.) DPT:281
GED: 4 SVP: 5 EC: 1 4 PA: L 4 7

Tests, adjusts and repairs water meters:

Connects meter to testing apparatus to test for leaks and recording accuracy by permitting specified volume of water to pass through meter under varying pressure. Disassembles meter by removing gear train and disk assembly, using hand tools. Cleans internal housing and parts by removing plant growth, rust and scale with wire brush and acid solution. Replaces warped or broken disks and gears. Repairs gears and disks by grinding to specified tolerances, using grinder, and fitting them in meter. Reassembles and tests meter. Tests large capacity meters in industrial plants to determine accuracy of operation. Keeps records of materials used and meters repaired.

8588-146 SPEEDOMETER REPAIRMAN(mech. equip., n.e.c.) DPT:681
GED: 3 SVP: 6 EC: 1 PA: L 4 7

Repairs and adjusts automotive speedometers:

Disassembles speedometer, using hand tools, and cleans parts with cloth. Inspects parts for wear and warp and replaces defective parts. Reassembles speedometer and tests it to determine whether it is magnetized, using testing device. Places magnetized speedometer in demagnetizer to correct malfunction. Tests speedometer for accuracy, using speedometer tester, and makes necessary adjustments, using hand tools.

May repair automobile tachometers, using testing equipment and hand tools. May ensure accuracy of speedometer tester, using stroboscope.

8588-150 STEAM METERMAN(scient. & ind. equip., n.e.c.)
DPT:681

GED: 3 SVP: 5 EC: B PA: M 4 7

Repairs, tests and adjusts steam-condensate meters and flow meters used to measure and record steam output and consumption: Dismantles meter, using hand tools, and cleans components in solvent. Examines parts for defects, and makes minor repairs, such as straightening bent pieces. Reassembles meter, replacing excessively worn or damaged parts. Connects meter to steam line and turns valve to pass steam through meter. Weighs condensation collected in condensate reservoir of meter and compares weight with meter reading and standard deviation chart to verify accuracy of meter. Adjusts meter valves to correct metering deviations. Installs meters in steam systems.

8588-154 THERMOSTAT REPAIRMAN(scient. & ind. equip., n.e.c.)
DPT:681

GED: 3 SVP: 5 EC: I PA: L 4 7

Repairs defective thermostats used in refrigeration, air conditioning and heating equipment: Reads work order, engineering specifications or instruction sheets for data related to type of thermostat to be repaired. Disassembles and examines thermostat to locate and remove defective parts, using screwdriver and other hand tools. Replaces defective parts; such as, bellows, capillary, range spring, and micro, relay or mercury switches. Cleans valve, using steel wool, chlorothene and air hose. Reassembles thermostat according to methods sheets, specification charts or parts book, using cam press, soldering iron and hand tools. Performs various types of tests, such as gas or pressure tests and measures tolerances of assembled parts, using devices, such as micrometer, scale, and calipers. Repairs leaks in valve seats or bellows of thermostats by replacing defective components. Examines thermostats for loose screws and dents. Applies paint touch-up to valves. Restamps number to identify thermostat and places repaired thermostats in tote boxes. Calibrates thermostats for specified temperature, and valves for pressure and flow rate by adjusting regulator screw and observing dial gauge for pressure reading.

8588-158 AIRCRAFT-INSTRUMENT-MECHANIC HELPER
(scient. & ind. equip., n.e.c.)
instrument-technician helper, aircraft.
DPT:684

GED: 3 SVP: 5 EC: I PA: L 4 7

Helps mechanic to repair and test aircraft instruments: Removes faulty instruments from aircraft and disassembles them, using hand tools. Adjusts and repairs instruments as directed, using testing equipment, tweezers and instrument-maker's hand tools. Cleans out instrument pressure lines, using compressed air equipment. Reinstalls instruments in aircraft. See also definition for term title, 02-160 HELPER (any ind.).

8588-162 INSTRUMENT-MECHANIC HELPER,
UTILITIES(scient. & ind. equip., n.e.c.)
DPT:684

GED: 3 SVP: 5 EC: I 5 PA: L 3 4 7

Helps mechanic to repair and maintain metering instruments used in electric-power-generating station: Disconnects and removes defective instruments, as directed by mechanic, using mechanic's and electrician's hand tools. Disassembles and reassembles instruments to assist in making repairs. See also definition for term title, 02-160 HELPER (any ind.).

8588-166 INSTRUMENT-REPAIRMAN HELPER(scient. & ind. equip., n.e.c.)
instrument-man helper.
DPT:684

GED: 3 SVP: 5 EC: I 5 PA: L 3 4 7

Helps repairman install, repair and adjust recording and controlling instruments, used to measure and control variables, such as pressure, flow, temperature, motion, force and chemical composition: Changes and collects charts on recording instruments. Observes operating condition of instruments and reports abnormal readings to instrument repairman. Drills holes in masonry or metal panels for installation of instruments, using electric or pneumatic drill. Drills, grinds and buffs parts to repair and finish them, using portable or bench tools. Paints instrument casings and panels, using brush or

spray-gun. Performs minor repairs to instrument-control systems as directed, by replacing defective parts, using instrument-repairman's tools and electrician's hand tools. See also definition for term title, 02-160 HELPER (any ind.).

8588-170 SURVEYING-AND-OPTICAL-INSTRUMENT-REPAIRMAN HELPER(scient. & ind. equip., n.e.c.)
DPT:684

GED: 3 SVP: 4 EC: I PA: M 4 7

Helps repairman to disassemble, clean, repair, and adjust precision instruments, such as surveying, optical, and photogrammetric instruments: Disassembles damaged or faulty instruments and removes defective parts, using hand tools. Cleans optical parts with ether, and metal parts with varsol. Examines parts for ease and freedom of movement. Positions and secures instruments, such as theodolite, compass or transit in test-mounts or fixtures. Focuses instruments on specified target and makes trial observation to verify optical accuracy and calibration. Tends machines, such as lathe, milling machine and grinder to fabricate or modify parts for instruments. See also definition for term title, 02-160 HELPER (any ind.).

8588-174 CALBRATOR, TORQUE WRENCH(scient. & ind. equip., n.e.c.)
DPT:684

GED: 2 SVP: 4 EC: I PA: L 4 7

Calibrates and repairs torque wrenches: Sets torque indicator, on end of wrench handle, to torque desired, and inserts head of wrench into socket on test scale. Twists wrench until wrench mechanism releases and notes corresponding indication on test scale. Adjusts wrench mechanism so that indications on test scale coincide with releases of torque wrench and settings on torque indicator, using allen wrench. Disassembles defective wrenches and examines and replaces or repairs parts, using hand tools. May calibrate other measuring devices, such as micrometers, vernier calipers, and snap gauges.

8588-178 GAS-METER-REPAIRMAN HELPER(scient. & ind. equip., n.e.c.)
DPT:684

GED: 2 SVP: 3 EC: I PA: M 4 7

Helps repairman dismantle, clean, repair, install and test gas meters: Dismantles meters, using hand tools. Cleans meter parts, such as panels, diaphragms, tangent arms, indicator shafts, and valves to remove grease, paint, rust and dirt, using cleaning solvents. Cleans outside of meter cases, using sandblasting machine. Examines cleaned parts for dents and excessive wear and discards unusable parts. Straightens bent parts, using rawhide hammer. Replaces worn gaskets, diaphragms, diaphragm disks and rings in meter, and tests diaphragm for leaks, using testing device. Solders small leaks, using soldering iron or returns meter to repairman for replacement of defective parts. Tests function of repaired meters, using low-flow apparatus. Solders tops on repaired tin-case meters, and wires tops on iron and aluminum case meters. Paints repaired meters, using spray gun. Replaces identification plate numbers, and places seal on meter according to government specifications. Repacks gas-meter-stuffing boxes with tallow-soaked yarn, and grinds, fits, and adjusts meter valves to prevent leaks. See also definition for term title, 02-160 HELPER (any ind.).

8589-OTHER MECHANICS AND REPAIRMEN, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with repairing and servicing miscellaneous mechanical equipment; such as, small domestic gasoline-powered lawn mowers, snow blowers, chain saws and portable generators and pumps. Occupations primarily concerned with oiling and greasing mechanical equipment are classified in this unit group. Oilers working in ships are classified in Unit Group 9157, ENGINE AND BOILER-ROOM CREW, SHIP. Oiling and greasing occupations at the level of the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.) are classified in Unit Group 9918, OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK,

N.E.C. Occupations concerned with repairing and servicing marine outboard and inboard engines are classified in Unit Group 8592, MARINE CRAFT, FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS.

8589-110 FIELD SERVICEMAN(mech. equip., n.e.c.) DPT:251 mechanical-service representative.

GED: 4 SVP: 7 EC: I 5 PA: M 3 4 5 6 7

Repairs plant and office machinery, and sells machinery, service contracts, parts and modernization kits at customers' premises:

Inspects machine and estimates repair costs, using charts and service manuals. Recommends company's maintenance services to customer. Requisitions replacement parts, such as drive belts, valves, seals, motors and gearboxes. Repairs and adjusts machines, using hand and power tools. Test-runs machine to verify conformance to manufacturer's specifications. Prepares records, showing nature of malfunction, cost of parts installed and labour charges. Sells machine parts, modification kits, and service contracts.

8589-114 AUTOMOTIVE-MAINTENANCE-EQUIPMENT SERVICEMAN(mech. equip., n.e.c.) DPT:281

GED: 4 SVP: 7 EC: B 67 PA: M 3 4 7

Repairs and adjusts equipment used to service, repair and test automotive vehicles:

Examines faulty equipment, such as oil or gasoline pumps, air compressors, lubrication equipment, hoists and dynamometers to ascertain nature and location of defects. Dismantles equipment and removes defective parts. Replaces or repairs defective parts, using pipe-fitting and other hand tools. Reassembles, adjusts and test-operates repaired equipment, using hand and power tools. Adjusts meters, registers and gauges of fuel and oil pumps to meet federal standards.

May install new equipment.

8589-118 DREDGE MECHANIC(mech. equip., n.e.c.) DPT:281

GED: 4 SVP: 7 EC: B5 PA: H 3 4 7

Repairs and services pumps, engines, and related equipment on suction dredge:

Examines faulty machinery and related equipment to determine nature of defects. Dismantles, cleans, repairs or replaces parts, using hand tools. Lubricates and reassembles pumps, engines, and other equipment, such as compressors and deck winches. Operates winches to move heavy equipment, such as work-boat.

May weld cracks or seams in pontoons and pipe, using gas or electric-arc-welding equipment.

8589-122 GUNSMITH(mech. equip., n.e.c.) DPT:281 small-arms repairman.

GED: 4 SVP: 7 EC: I PA: L 4 7

Repairs and modifies firearms according to blueprint or customers' specifications:

Examines parts of gun, such as barrel, firing mechanism, sights and stock for condition and accuracy of fit. Chisels, files, scrapes and performs other tooling to correct inaccuracies. Rebores barrels, using boring machine, to enlarge caliber of bore or to repair damaged bore. Operates broaching machine to cut rifling in barrel of small arms. Installs choke device on shotguns to control shot pattern. Operates machine to grind and polish metal parts. Immerses metal parts in bluing-salt-bath to impart rust resistant surface and blue colour to metal. Assembles parts, attaches and adjusts sights, and tests completed gun to determine strength characteristics, correct alignment, and assembly of fire-arm, using hand tools.*Fabricates new wooden stock for guns according to customers' specifications, using wood-working tools. Refinishes wooden stocks by hand sanding and rubbing with special finishing oil and quick-drying lacquer.

May make metal parts for guns, using hand tools and metalworking machines.

8589-126 PUMP INSTALLER AND REPAIRMAN(mech. equip., n.e.c.) DPT:261 pump-installation-and-service man.

GED: 4 SVP: 6 EC: O 6 PA: H 3 4 7

Installs and repairs various types of pumps in wells, such as centrifugal pumps, deep-well jet pumps, submersible pumps and vertical turbine pumps:

Drives hoisting equipment (rig) into position alongside of well. Starts hoisting engine and moves levers and pedals to raise and extend telescoping hoisting mast. Bolts guy wires and struts to mast for support. Raises pump section to vertical position and installs section in well casing, using hoist. Screws coupling, or bolts flange, to connect pump base to pipe column. Drives wedges under pump base of vertical-turbine-type pump to align base with pump shaft. Verifies alignment of pump by centering pump shaft in opening until it fits without interference, or by using machinists' dial indicator. Hoists electric-power unit or engine-drive gearbox into position over pump base, of vertical turbine type pumps, verifying alignment of pump shaft by inspection of clearance between shaft and hollow spindle of driver. Attaches pressure gauge and orifice meter or electric recorder to pump outlet, and pumps air into well to measure static and dynamic water levels and capacity of well. Dismantles and examines pump to determine cause of malfunction. Cleans, repairs, and replaces worn or damaged parts.

May direct truck-crane operator to hoist pump motor into position. May work in shop and repair several types of pumps.

8589-130 FUEL-INJECTION SERVICEMAN(mech. equip., n.e.c.) DPT:281

fuel-injection-equipment repairman.

GED: 4 SVP: 6 EC: I 5 6 PA: H 3 4 7

Repairs, tests and calibrates fuel injection units used on equipment, such as diesel engines, trucks, construction equipment and power plants:

Studies repair-order and disassembles unit to locate cause of malfunction. Repairs assemblies by replacing parts. Examines fuel-injection pump and governor parts for compliance with specifications. Assembles pumps and governors, and tests and calibrates fuel flow and pressure to meet operating specifications, using hand tools, special tools and measuring devices.

8589-134 PUMP REPAIRMAN(mech. equip., n.e.c.) DPT:281

GED: 3 SVP: 7 EC: B 5 6 PA: M 3 4 7

Repairs pumps, such as centrifugal and plunger-type pumps:

Examines pumps for malfunctioning and to locate damage or wear, such as poor alignment of pump shaft, slippage of drive belt or worn bearings. Observes pump in operation and feels for excessive heat and vibration of parts to detect cause of malfunction. Dismantles pumps, and repairs or replaces defective parts, using hand and power tools, hoists and welding equipment. Grinds and reseats valves, using valve grinding machine or hand drill with grindstone attachment. Reassembles pumps and checks performance of repaired pumps. Records nature and extent of repairs performed.

May wire motor to switchboard and install fuse box. May requisition replacement parts from supply department. May repair and adjust pump power units, such as diesel or gasoline-engines, and electric-motors.

8589-138 AIRPORT-MAINTENANCE MAN(construction; electric. equip.; mech. equip., n.e.c.) DPT:381

GED: 3 SVP: 7 EC: B 6 7 PA: M 2 3 4 7

Inspects and maintains airport buildings and equipment incidental to air transport, such as fuel and water supply services, beacons and landing-field lights, performing any combination of the following duties:

Inspects fuel system to detect and correct leakage, corrosion, faulty fittings, and other malfunctions of mechanical units, meters and gauges, including fuel hydrants, tank pits, distribution lines, storage tanks, turbines, and control rooms. Repairs, replaces and adjusts malfunctioning equipment according to specifications, using repair manuals and hand tools. Disassembles, adjusts, aligns and calibrates gauges and meters. Inspects electrical wiring, switches, controls, beacons and lights for safe operating conditions, and makes minor repairs. Performs other maintenance work, such as cleaning storage

tanks and drains, removing and installing filter systems, painting buildings and doing rough carpentry work.

8589-142 SAFE-AND-VAULT SERVICEMAN(mech. equip., n.e.c.) DPT:681
GED: 3 SVP: 7 EC: I 6 PA: VH 3 4 7

Installs and repairs safes and vaults in banks and other establishments:

Installs vaults, vault doors, safes and deposit boxes in prepared vault shell, according to blueprints, using equipment, such as wooden supports, hoist or forklift, dolly, and hand tools. Removes and repairs vaults, safes, vault compartments, hinges, dials, handles, and other related equipment, using hand tools, and machines and equipment, such as drill presses, and oxy-acetylene-welding and cutting apparatus. Adjusts safe and vault combinations to obtain new number sequence. Tests and repairs locks and locking devices [8589-150 Locksmith (mech. equip., n.e.c.)]. Removes interior and exterior paint finishes, and sprays on new finishes, using spray-painting equipment. May install safe and vault-alarm systems in banks and offices.

8589-146 LOCKSMITH(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: I PA: L 4

Repairs, installs and adjusts locks, makes keys and changes lock combinations:

Examines lock parts to check accuracy of fit. Manipulates lockpick in cylinder to open jammed locks or locks without keys. Disassembles locks, such as padlocks and door locks, to locate defect. Replaces worn tumblers, springs and other parts, or repairs them by chiseling, filing, scraping or other tooling to correct dimensions. Inserts new or repaired tumblers into lock to change combination. Cuts new or duplicate keys, using key-cutting machine.

May keep records of location, type and series of company locks and keys. May install locks on doors. May make lock parts, using metalworking machines and precision tools.

8589-150 PNEUMATIC-TOOL REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: I 5 PA: M 4 7

Repairs air motors and pneumatic tools, such as hammers, drills, chisels and reamers:

Starts motor or tool and listens to its sound to locate cause of malfunction. Disassembles motor, and repairs or replaces defective gears, pistons, connecting rods and other parts, such as hose coupling, gaskets and washers, using mechanics' tools. Routes components requiring machining or welding to machine shop.

May record repairs made and requisition replacement parts.

8589-154 PNEUMATIC-TUBE REPAIRMAN(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: I PA: M 4 7

Repairs pneumatic-tube-carrier systems:

Locates sources of trouble, such as jammed carriers, insufficient carrier speed, and defective station detectors, using installation diagrams and knowledge of system. Dismantles equipment to remove worn or damaged parts, using hand tools. Repairs or replaces parts to correct mechanical and electrical failures, using hand tools and schematic drawings. Tests repaired system for circuit continuity and proper functioning of mechanical equipment.

May install pneumatic-tube-conveyor systems or modify existing installations.

8589-158 SALVAGE MAN, MACHINERY(mech. equip., n.e.c.) DPT:281
GED: 3 SVP: 6 EC: I 5 PA: M 4 7

Repairs salvable mechanical parts of machines and equipment:

Dismantles machinery, equipment, and parts, using hand tools. Inspects parts to determine salvageability and deviation from standards, using fixed gauges and electrical test equipment. Operates metalworking tools, such as grinding, drilling, polishing and buffing machines to repair parts. Reconditions parts by filing, bending and straightening, using hand tools. Verifies dimensions and tolerances, using measuring instruments.

May reassemble parts, using hand tools. May direct or perform

cleaning, storing, and issuing of reclaimed parts and packing of usable materials for return to supplier. May keep inventory of salvaged parts in stock.

8589-162 HYDRAULIC-UNIT REPAIRMAN(mech. equip., n.e.c.) DPT:381
GED: 3 SVP: 6 EC: I 4 PA: H 3 4 7

Repairs hydraulic units, such as door closers, car hoists, jacks, fork-lifts and pumps:

Disassembles units, and drains oil from cylinder, using hand tools and vise. Immerses parts in cleaning solution. Removes encrusted dirt and rust, using electric-rotary-wire brush and grinding wheel. Examines and feels component parts, such as cylinders and pistons, for rust, dirt and scoring. Measures parts for wear, using micrometers, calipers and thickness gauges. Repairs or replaces components, such as bushings, rods and cylinders, using grinders, buffers, and hand tools. Welds cracked casings, using welding equipment. Fills oil chambers, and repacks spindles with packing, seals or washers. Assembles, adjusts and tests units, according to specifications, using hand tools and testing equipment.

May fabricate parts, using lathe, drill press, shaping and milling machines.

8589-166 PNEUMATIC-UNIT TESTER AND REPAIRER(mech. equip., n.e.c.) DPT:381
GED: 3 SVP: 6 EC: I PA: L 4 7

Repairs, adjusts and tests pneumatic units, such as regulators and switches:

Disassembles unit, using hand tools, and examines parts for defects. Drills-out broken screws or bolts, using portable electric drill, and rethreads hole, using tapping tool. Removes burrs, dirt, scale and rust from parts, using solvents, rags and airhose. Replaces defective parts, and reassembles unit. Mounts unit on test stand, and connects air or vacuum lines to unit. Observes gauges and manometers, records vacuum or pressure input on data sheets, and turns setscrews on unit to make adjustments as specified. Maintains record of repairs done, showing nature of malfunction, date of repair and spare parts used.

8589-170 SCALE MECHANIC(mech. equip., n.e.c.) DPT:381
scale repairman.
GED: 3 SVP: 6 EC: I PA: H 4 7

Installs, repairs and adjusts weighing scales:

Moves scale into position, manually, or using hoists and rollers. Inserts shims between scale base and foundation to level scale. Rolls test-weights to and from position on scale platform and reads dial indications or weight tickets to verify accuracy of scales. Determines type of error, and co-ordinates readings with weights by adjusting parts, such as loading box, rack, pendulum weights, and cams, for travel and leverage. Adjusts and tightens parts, such as locking handle, cam holdowns and ribbons, pendulum-lever assembly, and stops for tare-beam lever, using hand tools. Minimizes friction in all bearings and parts of scale, using hand tools, such as chisels, tin snips, hacksaw, plumb bob and wrenches. Repairs or replaces defective parts. Installs new parts in conjunction with balancing operation.

May be concerned with balancing scales and be designated accordingly,
Balancer, Scale

8589-174 FAREBOX SERVICEMAN(mech. equip., n.e.c.) DPT:681
register repairman.
GED: 3 SVP: 6 EC: I PA: L 4 7

Cleans and repairs fareboxes and similar transit company equipment, such as transfer-ticket machines, token-vending machines, ticket registers, and coin sorters and counters:

Disassembles equipment, using hand tools, and inspects parts for defects. Cleans covers, cases and working parts with cleaning solution. Replaces defective parts and adjusts timing and locking devices and machine parts as required. Reassembles equipment, oils mechanism and repaints outside of case, using oil can, brush and spray gun.

May replace locks on equipment, using hand tools.

8589-178 AIR-COMPRESSOR REPAIRMAN(mech. equip., n.e.c.) DPT:684
air-compressor mechanic.
 GED: 3 SVP: 6 EC: I 5 PA: L 4 7

Repairs air compressors according to manufacturers' manuals: Disassembles compressor, and cleans and examines parts for wear or breakage. Installs new parts, such as piston rings, valves, washers, bushings, and wrist pins, using hand tools. Reassembles compressor and adjusts clearances of moving parts, following manufacturers' manuals and using hand tools. Test-operates reassembled unit by connecting it to compressed-air outlet.

8589-182 REPAIRMAN, HAND TOOLS(mech. equip., n.e.c.) DPT:681
 GED: 3 SVP: 5 EC: I PA: M 4 7

Repairs hand tools, such as planes, vises, bit braces, levels and tape rules: Examines defective tool to determine nature of defect or cause of malfunction and possibility of repair. Disassembles tool, using hand tools, such as hammers, chisels, punches and files. Operates power tools, such as drill press and arbor press to remove screws, pins, rivets, bushings, casings and jackets from tools. Replaces defective part, or repairs part, using hand and power tools. Verifies dimensions, straightness, and concentricity of parts, using gauges. Reassembles tool, using hand and power tools. Records nature and extent of repairs performed and repair time involved. Maintains stock of spare parts.

8589-186 VENDING-MACHINE SERVICEMAN(mech. equip., n.e.c.) DPT:681
coin-machine serviceman.
 GED: 3 SVP: 5 EC: I PA: M 3 4 7

Services and repairs coin-operated-vending machines placed in establishments on concession basis: Drives service truck to visit establishments and examine operation of machines. Adjusts and repairs machines, replacing worn or defective electrical or mechanical parts, using hand tools and electrical testing equipment. Arranges for return of machines requiring major repairs. Dismantles and repairs or rebuilds them in shop, using hand tools and electrical tools, such as soldering gun. May collect coins from machine and make financial settlements with concessionaires. May service and repair a specific type of vending machine and be designated accordingly.

8589-190 VALVE REPAIRMAN(mech. equip., n.e.c.) DPT:684
 GED: 3 SVP: 5 EC: I 4 6 7 PA: H 3 4 7

Repairs defective valves and pipefittings removed from pipelines, such as in oilfields and refineries: Clamps valve in vise. Grinds surfaces of valve to specified finish, using portable grinder. Cleans valve parts, using electric buffer and solvents. Verifies dimensions of valve parts, by visual check and using calipers. Routes parts, requiring machining, to machine shop. Assembles and repacks valves, using hand tools. Screws valves on testing device and moves handle of hydraulic pump to test valve at specified pressures. Tightens bolts to stop leaks, using wrench. Removes flanges and pipefittings from pipe, using wrenches and oxy-acetylene-cutting torch. Cleans flanges and fittings, using sandblasting equipment. Paints valves and fittings, using spray gun. Keeps inventory of valves, flanges, and pipefittings, by size and type, and orders new parts from catalogue.

8589-194 FIRE-EQUIPMENT SERVICEMAN(mech. equip., n.e.c.) DPT:364
 GED: 3 SVP: 4 EC: B 6 7 PA: M 3 4 7

Services and repairs fire-fighting equipment, such as fire extinguishers and sprinklers, to secure property against fires: Dismantles fire extinguishers, and examines parts, such as tubings, head gaskets and horns for defects. Replaces worn or damaged parts, such as defective sections of hoses and pipelines, using hand tools. Cleans and recharges fire extinguishers with fire-extinguishing agents, such as soda water and sulphuric acid, carbon tetrachloride, or other patented solutions. Tests extinguishers for conformity with specifications, by turning valves to force water through lines, using hydrostatic-test equipment. Inspects items, such as water pumpers, fire

hydrants, water lines and connections, hose-house equipment, valves, fire doors and water level of gravity-feed tanks. Maintains inventory of equipment, and fills out inspection tags. Reports unsatisfactory conditions to fire chief. May clean and maintain gas masks, using hand tools. May be concerned with servicing and repairing fire extinguishers only, and be designated accordingly, Fire-Extinguisher Serviceman

8589-198 BICYCLE REPAIRMAN(mech. equip., n.e.c.) DPT:684
 GED: 2 SVP: 4 EC: I PA: M 4 7

Repairs and services pedal cycles: Examines defective cycles to determine nature and location of defects. Replaces damaged parts or accessories, such as handle bars, speed-change gears, stands, lights and seat, using hand tools. Tightens and loosens spokes to align wheels. Disassembles axle to repair coaster brakes and to adjust and replace defective parts, using hand tools. Adjusts cables or replaces worn or damaged parts to repair hand brakes. Adjusts steering gear, chain-drive, speed-change gears and lights. Repairs tire tubes, using cold or hot patches to cover holes. Lubricates parts. May weld cracked or broken frames together, using oxy-acetylene torch and welding rods. May repair spoked wheels for invalid-wheel chairs, sulkies and home exercisers. May assemble and rent or sell new bicycles and accessories.

8589-202 PUMP-INSTALLER-AND-REPAIRMAN HELPER(mech. equip., n.e.c.) DPT:664
pump-installation-and-service-man helper.
 GED: 2 SVP: 3 EC: O 6 PA: H 3 4 7

Helps install and repair various types of pumps in wells, performing any combination of the following duties: Shovels earth and lays timber and planks to build level runway and foundation for truck-mounted hoist and derrick mast. Drives stakes and attaches guys and struts to brace mast, using hand tools. Bolts pulley blocks to building frame or other anchors and runs hoist cables through pulley blocks. Attaches cable, rope or chain choker to pump parts and secures them to hoisting line. Signals pump erector to raise, lower, and position pump, using hand signals. Couples pipe sections, using wrenches and chain tongs. Inserts air hose into well, attaches orifice meter or electric recorder to pump outlet, and pumps air into well to test well for capacity and water level. See also definition for term title, 02-160 HELPER (any ind.).

8589-206 MINING-SHOVEL OILER(mining & quarrying) DPT:587
shovel oiler.
 GED: 2 SVP: 3 EC: O 5 PA: M 2 3 4

Lubricates crawler-track, stripping and loading shovels used for open-pit or strip-mining operations: Heats dope (heavy duty lubricant) in dope box to improve viscosity, and sprays lubricant onto gears and other moving parts. Greases and oils other specified components, using grease gun and oil can. Inspects shovel for worn parts, and assists operator in making minor repairs, using hand tools. Shovels dirt, rock or coal from working area to prevent fouling of shovel treads or power cables. Records production, repairs and down time. May perform other duties, such as checking slope of grade cuts, using straight edge, and guiding trucks into loading position, using hand signals. May be designated according to type of shovel serviced and be designated accordingly; for example, Loading-Shovel Oiler Stripping-Shovel Oiler

8589-210 OILER AND GREASER(mech. equip., n.e.c.) DPT:587
machine oiler.
 GED: 2 SVP: 3 EC: I 5 6 7 PA: M 2 3 4

Oils and greases moving parts, such as shaft and motor bearings, sprockets, drive chains, gears and pulleys of mechanical equipment: Fills containers, such as oilcan, and pneumatic or hand-operated grease gun with specified lubricant. Squirts or pours oil on moving parts and friction surfaces or into holes, oil cups or reservoirs. Turns

oil cup valves to regulate flow of oil to moving parts. Forces grease into bearings with grease gun, smears grease on friction surfaces, or packs grease cups by hand. Refills or changes oil in wells and sumps of lubricating systems. Reports machinery defects or malfunctions to supervisor or machine operator. Maintains records of activities. May make minor adjustments and assist machine operators or repairmen.

8589-214 FIRE-EQUIPMENT-SERVICEMAN HELPER(mech. equip., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: B 6 7 PA: M 3 4

Helps serviceman to service and repair fire-fighting equipment: Helps dismantle fire extinguishers and replace defective parts, such as hoses and pipelines, using hand tools. Cleans and recharges fire extinguishers with fire extinguishing agents, such as soda water and sulphuric acid, carbon tetrachloride, or other patented solutions. Helps inspect items, such as water pumpers, fire hydrants, water lines and connections, hose-house equipment, valves, fire doors, and water level of gravity-feed tanks. Fills out inspection and name of inspector. See also definition for term title, 02-160 HELPER (any ind.). May be concerned with helping to repair fire-extinguishers only, and be designated accordingly, Fire-Extinguisher-Serviceman Helper

8589-218 GARAGE SERVICEMAN(motor vehicle) DPT:687
lubrication man.
GED: 2 SVP: 3 EC: I 6 PA: M 3 4

Lubricates and services automotive vehicles: Injects grease into units, such as universal joints and steering knuckles, using hand or pneumatic grease gun. Inspects fluid level of brake reservoir, steering gear box, power steering reservoir, transmission, differential and rear axle housings, and adds specified lubricants when required. Sprays leaf springs with lubricant, using spray gun. Drains oil from crankcase and refills crankcase with required amount of oil. Adds water to radiator and battery. Replaces oil filter, air filter, windshield-wiper blades, spark plugs and fan belt. Cleans garage floors and work areas, using cleaning equipment.

May refuel automotive vehicles. May repair tires. May keep record of gasoline and oil supplies in storage tanks.

8589-222 SPRAY-GUN REPAIRMAN(mech. equip., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: I 7 PA: L 4 7

Repairs and adjusts spray-paint guns: Disassembles spray gun, using wrenches. Cleans parts in gasoline or other solvent. Replaces valves, jets, and other worn or broken parts. Attaches new hose to guns. Turns thumbscrews, nuts, and other controls on gun to adjust jets and nozzles. May repair agitators of paint-mixing equipment. May mix lacquers, using paddle or electric shaker-agitator, scales, and viscosity cups. May order parts and materials to maintain inventory levels.

8589-226 GREASER, JOURNAL BOX(rail. rolling stock) DPT:687
GED: 2 SVP: 2 EC: B PA: L 3 4

Cleans lubricating pads, and packs them in wheel-journal-boxes of railway cars: Dumps used pads into centrifuge and starts machine. Removes pads after specified time and rejects worn pads. Dumps pads in oil tank to saturate them with oil. Packs lubricating pads around wheel bearings in journal-box receptacles, using notched packing tool.

8589-299 OTHER MECHANICS AND REPAIRMEN

This group includes mechanics and repairmen, not elsewhere classified; for example, those who service, adjust and repair lawn mowers or chain saws, replace glass rods in yarn-winding frames, or repair wheels and casters on rolling equipment, such as racks and carts. Typical examples of occupational titles covered by this residual group definition are:
Chain-Saw Repairman(mech. equip., n.e.c.)
Lawn-Mower Repairman(mech. equip., n.e.c.)
Wheel-and-Caster Repairman(mech. equip., n.e.c.)

859-OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS

This minor group includes occupations, not elsewhere classified, concerned with building and repairing ships and other metal, wood or fibreglass marine craft; and fabricating, assembling and repairing a variety of products; such as, jewellery, silverware, pens and pencils, musical instruments, games, toys, sporting goods, brooms, brushes, buttons, zippers and miscellaneous paper products. Includes painting and decorating occupations, except those directly concerned with construction; and inspecting, testing, grading and sampling occupations engaged in quality control work primarily related to worker activities in this minor group. These occupations are classified in the following unit groups:

- 8590** Foremen: Product Fabricating, Assembling and Repairing Occupations, n.e.c.
- 8591** Jewellery and Silverware Fabricating, Assembling and Repairing Occupations
- 8592** Marine Craft Fabricating, Assembling and Repairing Occupations
- 8593** Paper Product Fabricating and Assembling Occupations
- 8595** Painting and Decorating Occupations, except Construction
- 8596** Inspecting, Testing and Grading Occupations: Product Fabricating, Assembling and Repairing, n.e.c.
- 8598** Occupations in Labouring and Other Elemental Work: Product Fabricating, Assembling and Repairing, n.e.c.
- 8599** Other Product Fabricating, Assembling and Repairing Occupations, n.e.c.

8590-FOREMEN: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, as described under the master title, 01-250 SUPERVISOR/FOREMAN (any ind.), concerned with supervising and co-ordinating activities of workers engaged in fabricating, assembling, inspecting and repairing a variety of products, such as jewellery and silverware, musical instruments, games, toys, sporting goods, brooms and brushes, miscellaneous paper products and ships and small boats. Includes: supervising and co-ordinating activities of workers who paint or apply protective, decorative or identifying coatings to various products and equipment. Foremen of construction painters are classified in Unit Group 8780, FOREMAN, OTHER CONSTRUCTION TRADES OCCUPATIONS.

- 8590-110 FOREMAN, INSPECTING, TESTING, GRADING AND SAMPLING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.(any ind.)** DPT:138
quality-control foreman.

Supervises and co-ordinates activities of workers, not elsewhere classified, engaged in inspecting and other quality control work in the fabrication, assembly and repair of miscellaneous products, (Unit Group 8596); Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example, Foreman, Inspection

8590-114 FOREMAN, JEWELLERY AND SILVERWARE WORKERS(jewellery & precious metal prod.)

DPT:138

Supervises and co-ordinates activities of workers engaged in fabricating, assembling and repairing jewellery and silverware, (Unit Group 8591);

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example, Foreman, Jewellery Repairing
Foreman, Silverware Department

8590-118 FOREMAN, MARINE CRAFT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS(ship & boat bldg.) DPT:138

Supervises and co-ordinates activities of workers engaged in building and repairing ships, and fabricating, assembling and repairing other metal, wood or fibreglass marine craft, (Unit Group 8592);

Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example, Foreman, Fibreglass Boats
Machinist Foreman, Outside

Painter Foreman, Shipyard
Pipe-Fitter Foreman, Ships
Rigger Foreman
Shipfitter Foreman
Shipwright Foreman

**8590-122 FOREMAN, PAINTING AND DECORATING
OCCUPATIONS, EXCEPT CONSTRUCTION(any
ind.) DPT:138**

Supervises and co-ordinates activities of workers engaged in preparing surfaces, and painting, decorating or applying protective, decorative or identifying coatings to produce finishes on wood, metal or similar surfaces, including transportation equipment, (Unit Group 8595):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a particular activity and be designated accordingly; for example,
Foreman, Buffing and Lacquering
Foreman, Decorating
Foreman, Finishing Room
Foreman, Mirror Silvering(glass)
Foreman, Paint Department
Foreman, Porcelain Enameling

**8590-126 FOREMAN, PAPER PRODUCT FABRICATING
AND ASSEMBLING OCCUPATIONS(paper prod.) DPT:138**

Supervises and co-ordinates activities of workers concerned with fabricating and assembling paper products, such as paper bags, boxes, envelopes, containers, liners, labels and similar items, (Unit Group 8593):
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.).

May supervise workers engaged in a specific activity and be designated accordingly; for example,
Foreman, Box Making
Foreman, Coremaking
Foreman, Moulded-Pulp Products

**8590-130 DOCKMASTER(ship & boat bldg.) DPT:138
dock foreman; docking master.
GED: 4 SVP: 7 EC: O PA: L 4 5**

Supervises and co-ordinates activities of workers engaged in drydocking vessels for painting, cleaning and repair:
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Analyzes vessel's docking plan, structural drawings, and specifications to determine size, shape, and number of keel and bilge blocks required to support vessel. Directs docking crew in assembling, positioning, and securing blocks to floating drydock platform, marine railway, or floor of graving dock. Takes sights to establish reference points for positioning vessel over blocks, using transit, or boot jack and centering wire, and directs crew in aligning vessel over blocks. Directs workers in pumping operations and in positioning, flooding and pumping gate in graving dock. Supervises flooding operations and removal of vessels from drydock. Maintains records of services supplied to ships in dock.
May direct repair work of drydock structure.

**8590-134 FOREMAN, MARINE SERVICE(ship & boat bldg.) DPT:138
GED: 4 SVP: 7 EC: B PA: L 4 5 6 7**

Supervises and co-ordinates activities of workers engaged in repairing, painting, and restoring small craft in boat-repair service establishment:
Performs duties as described under master title, 01-250 SUPERVISOR/FOREMAN (any ind.). Confers with owner or crew of vessel to obtain maintenance history and details concerning condition of craft. Observes and listens to vessel in operation to detect unsafe or malfunctioning equipment and leaks or other flaws in hull superstructure, according to knowledge of maintenance needs of small craft and marine safety requirements. Performs tests on vessel and equipment, using gauges and other standard testing devices. Estimates cost of repairs according to knowledge of labor and materials requirements or fee schedule.

**8590-199 OTHER FOREMEN, PRODUCT FABRICATING,
ASSEMBLING AND REPAIRING OCCUPATIONS**

This group includes miscellaneous product fabricating, assembling and repairing foremen, not elsewhere classified; for example, those who supervise and co-ordinate activities of workers engaged in fabricating brushes, lamp shades and paint rollers, and assembling cartridge primers and other products, such as pens, pencils, toys and games. Typical examples of occupational titles covered by this residual group definition are:

Foreman, Brush Making(misc. prod. fab., n.e.c.)
Foreman, Lamp Shade Fabrication(misc. prod. fab., n.e.c.)
Primer Foreman(explosives)
Foreman, Assembly(misc. prod. fab., n.e.c.)
Foreman, Toy Assembly(sport. & toy)

**8591-JEWELLERY AND SILVERWARE
FABRICATING, ASSEMBLING AND REPAIRING
OCCUPATIONS**

This unit group includes occupations concerned with fabricating, assembling and repairing fine and costume jewellery and precious metal ware. Activities include: examining, cutting, and polishing precious and semi-precious stones for decorative jewellery articles; shaping and setting gems; fabricating and assembling trophies, tableware, dresser sets and ornamental articles, rings, brooches and bracelets of precious or semi-precious metals and alloys; machining, gluing, riveting, soldering, pressing-forging, fitting-placing and abrading, using a variety of hand or power tools, and equipment, chemicals, optical instruments and accessories. Jewellery moulding and casting occupations are classified in Unit Group 8137 - MOULDING COREMAKING AND METAL CASTING OCCUPATIONS. Occupations concerned primarily with the making of diamond dies and cutting tools are classified in Unit Group 8311 - TOOL AND DIE MAKING OCCUPATIONS. Jewellery sample-making occupations are classified in Unit Group 8395 - PATTERNMAKERS AND MOULDMAKERS, N.E.C. Jewellery enameling occupations are classified in Unit Group 8595 - PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION.

**Precious Stone and Metal Jewellery Fabricating,
Assembling and Repairing Occupations
8591-110 through 8591-130**

**8591-110 DIAMOND CUTTER(jewellery & precious metal
prod.) DPT:261
GED: 4 SVP: 8 EC: I PA: S 4**

Examines, cuts, shapes and polishes diamonds, applying knowledge of diamonds, and using optical instruments, lathe and laps:
Examines diamond, using magnifying lens and marks cleavage, using wooden stylus and china ink, to prepare for cutting. Positions diamond in pre-cemented holder of lathe and lowers holder by turning screw to align sawing disk and diamond. Starts lathe and presses diamond against revolving disk that scribes stone along pre-marked lines to verify alignment of cutting channel with revolving disk. Determines appropriate pressure and sawing speed, according to stone hardness, and varies pressure on sawing disk by sliding weight on arm to saw diamond. Listens to continuous sibilant sound of grinding and cutting equipment to obtain exact friction needed for attainment of standards. Mounts cut diamond in girdle (holding device), using cement, and holds diamond against revolving diamond-dust-impregnated lap for shaping. Mounts shaped diamond in dop (cup-shaped holding device) above polishing machine so that lap is parallel to crystallographic axis of diamond. Starts polishing machine and applies graded-diamond-dust and oil on surface of lap to grind and polish facets. Examines diamond periodically during cutting, shaping, and polishing processes, using magnifying glass and angle gauges to determine progress. Discusses work specifications with clients.

May be designated according to stage of cutting; for example,
Cleaver
Diamond Polisher
Girdler

8591-114 LAPIDARY(jewellery & precious metal prod.)
DPT:261
gem cutter.
GED: 4 SVP: 8 EC: I 6 PA: S 4 7

Examines, cuts, shapes, and polishes precious and synthetic gems, applying knowledge of gems and using optical instruments, cutting disks and laps:

Examines gem with magnifying glass and through liquid solutions to detect defects in colour, quality and physical structure and to visualize requested size and shape of gem after cutting. Discusses cutting difficulties and possible alternatives with client to obtain advanced approval before transforming precious stone. Positions rough stone in holding device and holds stone against edge of diamond saw to cut stone. Removes cut stone from holder and grinds rough edges, using millstone. Affixes stone to dop stick, using lapidary wax to facilitate grinding and polishing. Grinds facets on gem against lead lap coated with abrasive compound or shapes gem into oval form by manually rotating it against grindstone. Examines stone for accuracy of cut, using magnifying glass, millimeter ruler and angle gauges. Polishes stone, using felt or canvas-covered polishing wheel, and polishing compounds, such as tripoli or rouge.

May make or modify tools used in lapidary work.

8591-118 GEMOLOGIST(jewellery & precious metal prod.)
DPT:261
GED: 4 SVP: 7 EC: I PA: S 4 7

Appraises gemstones and diamonds, applying knowledge of precious stones, market values, and utilizing testing equipment:

Examines precious-stone surfaces and internal structure, using optical instruments; such as, polariscope, proportionscope, refractometer, diamondlite, and gemolite, to differentiate between stones, to identify rare specimens and to detect peculiarities affecting stone values; such as, purity, diameter, form, cleavage lines, and colour grading. Immerses stones in prescribed chemical solutions to determine specific gravities which indicate composition of stone for identification purposes. Scratches or cuts surface of stone with styluses and wheels of different hardnesses, to test for durability. Discusses estimates or submits written reports to clients.

8591-122 JEWELLER(jewellery & precious metal prod.)
DPT:281
GED: 4 SVP: 7 EC: I 6 PA: S 4 7

Fabricates and repairs precious and semi-precious metal jewellery articles; such as, rings, brooches, pendants, bracelets and lockets:

Cuts, saws, and files article, preparatory to further processing, using hand and power tools. Drills holes and sockets for stones or hinges in pieces of jewellery. Solders pieces of jewellery together, using soldering torch, iron, special solders, pick and tweezers, to assemble new articles or repair broken parts. Forms rings of specified size and shape either by using arbor-stretching device to expand and stretch rings or by sawing through band, adding or removing metal, and soldering ends together. Finishes article, using hand file, emery paper and buffing machine.

May specialize in shaping and forming models of article from metal for casting workers, using carving tools. May reshape and restyle old jewellery, following designs or instructions, using hand tools and machines; such as, jeweller's lathe, spinning lathe, and drill. May be designated according to type of metal or jewellery worked upon; for example,

Brooch Maker
Goldsmith
Locket Maker
Platinumsmith
Ring Sizer

8591-126 PRECIOUS STONE SETTER(jewellery & precious metal prod.)
DPT:381
GED: 4 SVP: 7 EC: I PA: S 4 7

Sets precious and semi-precious stones in jewellery mountings, according to specifications:

Studies and compares mounting with specified jewellery design to determine most appropriate position of settings. Places item in vise and marks drilling, filing and engraving locations, according to design specifications. Drills, cuts, and files settings to accommodate stones, using power or hand tools. Decorates raised portions of metal, using engraving tools. Positions mountings in sandblasting machine to clean and sharpen design. Positions stones in setting and fixes them in place by pressing prongs around stone, by raising retaining metal ridge around stone, or by tapping edges of setting, using hand tools. Smooths edges of setting, using emery file and pointed steel tool. Examines union of stone and setting, using magnifying glass. Modifies existing mountings to reposition jewels.

May specialize in setting particular type of precious stone or in laying out settings and be designated accordingly; for example,

Diamond Setter
Lay-out Man

8591-130 CHAIN MAKER, HAND(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Forms chains of various shapes and designs from gold or silver wire to make jewellery articles, according to specifications:

Winds wire into coils, using rotating shaft, to shape links. Saws coils through one side to separate links, using handsaw. Joins links together and closes link ends to assemble chain, using pliers. Brushes flux on links to clean chain. Solders links at point of closure to form chain, using solder and gas torch. Immerses chain in chemical baths to descale links coated with flux. Operates hammering machine to produce flattened effect on chains when required. Occasionally curbs chain to obtain twisted contour, using rotating hook device. Ties loops of stainless steel wire to lengths of fine machine-assembled gold chain to form eyelets. Hand solders eyelet ends to bracelet and brooches, using gas torch and tweezers.

Fabricating, Assembling and Repairing Production Jewellery Occupations 8591-150 through 8591-190

8591-150 BENCH HAND(jewellery & precious metal prod.)
DPT:684
GED: 3 SVP: 4 EC: I PA: S 4 7

Cuts out, files, and solders parts for jewellery articles according to clients' specifications:

Cuts out parts, using power saw or handsaw. Shapes, trims, and smooths parts, using files. Joins parts together, using solder and torch. Bends ring prongs and brooch clasps, to secure settings, using pliers. Examines work visually to ensure conformity to specifications.

8591-154 RING MAKER(jewellery & precious metal prod.)
DPT:684
arborer.
GED: 2 SVP: 4 EC: I 6 PA: S 4 7

Forms rings by either of the following methods:

1. Smooths and squares ends of ring band, using file. Inserts ring band in bending device, and pulls lever to bend blank into semi-circle. Places blank on mandrel and hammers it into circular shape, using rawhide mallet. 2. Ties or twists gold or silver wires together and bends to form rings. Solders ends, and files rings to remove excess metal. Cleans and polishes rings by buffing or immersing in acid solution. Measures dimensions of rings, using micrometer or sizing mandrel, to ensure conformity to specified sizes.

8591-158 RING STAMPER(jewellery & precious metal prod.)
DPT:684
blanker.

GED: 2 SVP: 4 EC: I 5 6 PA: L 4 7

Stamps out, shapes and embosses ring blanks, using presses and hand tools:

Aligns and bolts dies on ram and anvil of press, using rule, feeler gauges and hand tools. Positions metal strips on lower die and moves controls to lower ram that cuts blanks, forms contoured ring body, or embosses designs on smooth surface of blanks. Trims excess metal from edges of contoured ring body, using hand file. Occasionally heats metal blanks to soften metal strips, using gas torch. Operates small rolling mill to decrease thickness of certain metal ingots to obtain metal strips.

8591-162 EXPANSION-BRACELET ASSEMBLER(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Assembles metal expansion bracelets, performing any combination of the following duties:

Forms skeleton chain by joining movable ribs together, using pneumatic riveting press. Inserts coil spring in center eyelet of watch-band rib, using pencil-shaped jig. Fastens rib to skeleton by turning in projecting ends of spring. Forces metal shells onto watch-band, using press, to cover springs and skeleton. Smooths and polishes completed bracelet, using polishing wheel and dressing compound, to produce lustre or dull finish.

8591-166 PEARL-EAR-RING MAKER(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 3 EC: I PA: S 4 7

Sets natural or synthetic pearls on blanks to form ear-rings, following designs or instructions:

Winds wire-threaded pearls around metal-looped ear-ring blanks, manually. Cuts end of wire thread, using cutters. Twists wire to fasten pearls on loops, using pliers. Pastes single or entire loops of pearls to facings of other loop blanks, according to design.

8591-170 POLISHER(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Trims, smooths, and polishes articles of jewellery, using file, rouge, and polishing wheels:

Mounts polishing wheel on motor driven shaft and places article of jewellery in holding device. Applies rouge to rotating wheel and moves article against wheel to remove surface blemishes and produce lustre. Files excess metal from surface, edges, and soldered joints of jewellery, by holding jewellery article against lapping disk, or using hand tool. Applies dressing compound and rubs article with cloth to remove discoloration and to produce lustre. Buffs jewellery to produce frost finish, using abrasives. Holds jewellery against wire-brush wheel to remove stains, oxide coatings, solder flux and to produce satin-smooth finish. Feels and examines surface of polished articles to ensure compliance with specifications.

May be mainly concerned with finish filing and be designated accordingly; for example, Filer, Jewellery

8591-174 ARTIFICIAL-PEARL MAKER(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 2 EC: I PA: L 4 7

Dips plastic beads in glue and pearl lacquer to produce artificial pearls: Sticks beads on toothpicks and mounts them on wooden blocks. Clamps blocks or racks in bead-dipping machine and pulls lever to lower beads into solution. Loads blocks or racks onto rotating holder of drying machine and starts rotating action to avoid dripping of glue or pearl lacquer applied successively to obtain a satin finish. Examines reflective qualities of beads as work progresses to obtain exact tint and colour. Cuts pearls off toothpicks, using knife.

8591-178 CHARGER(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 2 EC: I PA: S 4 7

Prepares jewellery findings (pieces for assembly) for subsequent soldering operations:

Positions jewellery article on non-flammable work surface, such as asbestos board or pan of crushed emery stone. Selects findings and positions them on jewellery article, using tweezers. Deftly picks up minute particle of solder, using brush or pick and accurately positions solder (charge) at juncture of jewellery article and finding.

8591-182 FINDINGS FINISHER(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 2 EC: I PA: S 4 7

Assembles findings to make costume jewellery articles by either of the following methods:

1. Inserts prongs of one finding into corresponding holes of another and shapes findings with pliers to obtain fit. 2. Positions findings under swedging (riveting) tool in press. Depresses pedal or moves lever to lower swedging tool that spreads and flattens prongs to join findings. Drills holes in findings, using small drill. Assembles findings, using pliers, screwdriver and jeweller's hammer. Finishes costume jewellery article on powered abrasive disk or emery wheel. May flux and torch-braze jewellery articles. May be mainly concerned with riveting and be designated accordingly; for example, Swedger

8591-186 CHAIN-MAKING-MACHINE TENDER(jewellery & precious metal prod.)
DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends one or more automatic machines that produce jewellery chain: Installs chain-making device on machine to obtain specified size of chain, using hand tools. Places reel of solder-charged wire on machine feeder bracket and feeds end of wire into machine. Turns valve to supply soldering oven with heating gas, and depresses switch to ignite gas flame. Presses automatic control to keep oven filled with inert gas and to start machine. Inspects chain to detect defects, using loupe. Places trays of completed chains on conveyor for further processing. May fabricate and repair tools for chain-making machine, applying machine shop knowledge and using hand and power tools.

8591-190 RIVETER(jewellery & precious metal prod.)
DPT:687
GED: 2 SVP: 2 EC: I PA: L 4

Rivets top, attaches letters, and flattens prongs on articles of jewellery: Bores hole for rivet, using small power drill. Clinches parts of jewellery by either of the following methods: 1. Inserts prongs or rivets in holes and flattens them against steel plate, using loupe. 2. Positions rivets in holes of workpiece and presses parts together, using riveting ram that expands rivet shank.

Silverware Fabricating, Assembling and Repairing Occupations 8591-210 through 8591-299

8591-210 SILVERSMITH(jewellery & precious metal prod.)
DPT:281
GED: 4 SVP: 7 EC: I 6 PA: L 4 7

Assembles and repairs silver hollow-ware such as tableware and dresser sets, using lathe, annealing oven, gas torch and hand tools:

Anneals workpiece in gas oven for prescribed time to soften metal for reworking. Wires parts to body to prepare unit for soldering. Solders parts and seams, using gas torch and holding devices, and joins plastic separators to handles of articles, such as coffee and tea pots, using cold solder. Operates lathe to form articles of silverware out of silver stock or plated sheet, according to sketches. Fills holes and cracks with silver solder, using gas torch. Pierces and cuts open design in ornamentation, using hand drill and scroll saw. Restores dented embossing on articles, using hammer and punches. Hammers out deformities, levels and sets bottoms, using hand tools. Cleans residue from articles with acid solution.

8591-214 HAMMERSMITH(jewellery & precious metal prod.)
DPT:681

GED: 3 SVP: 6 EC: 1 PA: L 4 7

Repairs defects in silver hollow-ware, such as trays, teapots and bowls, using hammers, and tracing punches:
Examines article to determine nature of defect, places article on anvil or holding device and selects hammer with suitable head to pound out dents or bulges. Forms concave depression in bottom of article to improve its stability, using tracing punches and hammer. Verifies levelness of bottom edges of article, using straight-edge, or by rocking article back and forth on flat surface. Hammers out edges of scratches, or holes, using planishing hammer. Straightens twisted articles by hand.

8591-218 POLISHER, SILVERWARE(jewellery & precious metal prod.)
DPT:684

buffer, silverware.

GED: 3 SVP: 5 EC: 1 5 PA: L 4 7

Polishes sterling or silver plated hollow-ware or flatware such as bowls, tea sets and cutlery by turning item against polishing wheel and applying compound:

Selects felt, leather or brush polishing wheel according to article to be polished, type of finish specified or amount of metal to be removed. Attaches wheel to drive mechanism, using wrench. Starts polisher and manipulates article against wheel to smooth surface, produce specified finish and remove metal and surface defects, such as burns, salt deposits or excess solder at joints. Holds buffing compound stick against revolving wheel or manually applies compound of powdered pumice and oil to work piece while turning it against wheel to coat polishing wheel. Replaces worn wheels, using wrench. Examines articles for finish.

May remove scratches, spots or blemishes with pumice stone. May polish other metal products such as copper and pewter. May be designated according to type of abrasive compound used; for example,

Grease Buffer, Tripoli
Polisher, Sand

8591-222 FLATWARE-BUFFING-MACHINE SET-UP OPERATOR (jewellery & precious metal prod.)
DPT:682

GED: 3 SVP: 4 EC: 1 5 6 PA: M 4

Sets up and operates machine that buffs silver or stainless steel flatware between cloth or felt rolls to impart mirror-like finish:

Loads flatware items into column of racking device and presses switch to feed items from column into individual slots of racking device. Mounts buffing rolls in machine holders, using wrenches. Turns wheel that adjusts pressure, by setting distance between rolls. Turns set-screws and stop nuts to adjust motion of machine table. Presses switch to start rollers. Squeezes handles to open jaws of holding fixture and grip ends of workpieces in position on racking table. Inserts and locks fixture in sleeves of machine table with blades, tines, bowls or handles of workpieces inserted between buffing rolls. Starts machine that closes rolls on workpieces, rocks machine bed up and down and side to side to ensure complete buffing. Separates rolls, and retracts machine bed after completion of preset time cycle. Examines lustre of workpieces. Adjusts pressure of rolls or changes rolls to buff flatware to desired finish. Unloads flatware from holder onto conveyor.

8591-226 PROFILE TRIMMER(jewellery & precious metal prod.)
DPT:684
nibbling-machine operator; profile-saw operator.
GED: 2 SVP: 3 EC: 1 5 6 PA: S 4 7

Trims excess metal from edge of hollow-ware, by either of the following methods:

1. Selects punch according to intricacy of scroll design, and installs punch into nibbling machine, using wrench. Starts machine, and guides hollow-ware under punch to trim metal flush with edge of ornamentation. Files burrs and sharp edges from workpiece. 2. Selects saw blade according to metal composition of workpiece, and mounts blade on driving spindle, using wrench. Measures distance from bottom of workpiece to ridge or scallop on contour. Adjusts height of saw blade, using hand tools. Starts machine and positions hollow side of workpiece over saw blade with top flat against backboard. Guides

workpiece against saw following designated ridge or scallop to cut excess metal to the same height around edge of workpiece.

8591-230 MOUNTER, HOLLOW-WARE(jewellery & precious metal prod.)
DPT:684

GED: 2 SVP: 3 EC: 1 PA: L 4 7

Assembles silver hollow-ware; such as, lazy susans, teapots, creamers and chafing dishes:

Drills, reams and taps holes in silverware parts, using hand and power tools. Screws, bolts or pins parts; such as, base, legs and lid, to body of hollow-ware, using hand tools. Adjusts length of legs, or flattens base with mallet, to make article stand firmly and level. Solders parts together, using torch.

May buff and polish articles after assembly to remove finger marks, using powered buffer, cloth and polishing compound.

8591-234 TROPHY ASSEMBLER(jewellery & precious metal prod.)
DPT:684

GED: 2 SVP: 3 EC: 1 PA: S 4

Assembles trophies, according to specifications, using power and hand tools:

Obtains parts and pieces from stockroom, according to specifications. Drills holes in trophy base or plaque, using electric drill or drill press. Measures and cuts metal stock to length, using rule and hacksaw. Glues felt to back of plaque, bottom of base, or screws in metal feet. Staples, tapes or screws metal plate to base. Bolts parts together, using screwdriver and socket wrench. Removes protective paper lining used to prevent damage, from plaques or metal stock, and polishes assembled trophy or plaque. Attaches marble or onyx decoration according to specifications, using adhesive tape.

May wrap trophy in tissue paper, preparatory to shipping.

8591-238 HOLLOW-WARE-BUFFING-MACHINE TENDER
(jewellery & precious metal prod.)
DPT:685
GED: 2 SVP: 3 EC: 1 5 PA: L 4

Tends battery of machines that automatically buff shells for silver-plated hollow-ware such as bowls, tea sets, vegetable dishes and gravy boats to remove scratches and press marks, and impart smooth finish prior to plating:

Selects buffing wheel of size and shape to suit workpiece and bolts wheel to drive shaft. Selects jig to match exterior or interior shape of workpiece and bolts it to chuck on lathe arbor. Clamps workpiece in jig and turns stop nuts to position assembly against buffing wheel. Adjusts timing device to regulate buffing time according to type, thickness and surface of metal. Starts machine and holds stick of tripoli or similar compound against wheel to coat wheel with abrasive. Observes operation and removes workpiece at end of timed cycle.

8591-242 CEMENTER, KNIFE PARTS(jewellery & precious metal prod.)
DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Joins knife blades to hollow handles, using cement, and dries in oven: Measures prescribed quantities of water and powder and blends them in mixing vat for specified time to make cement. Pours small amounts of mixture into knife handles and stands them in compartment of tote box. Inserts tang of blades into cement-filled handles and aligns blades, manually. Places assembled knives in spring holder of tote board and pushes loaded tote board into drying oven for specified time. Verifies alignment of dried knives and cleans excess cement, using steam or scraper.

8591-299 OTHER JEWELLERY AND SILVERWARE FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS

This group includes jewellers and silverware workers, not elsewhere classified; for example, those who make beads, assemble compact cases, and brush oxide solution on patterned surfaces of silverware and silver plated ware. Typical examples of occupational titles covered by this residual group definition are:

Bead Maker(jewellery & precious metal prod.)

Compact Assembler(jewellery & precious metal prod.)

Oxidizer(jewellery & precious metal prod.)

8592-Marine Craft Fabricating, Assembling and Repairing Occupations

This unit group includes occupations concerned with building and repairing ships, and fabricating, assembling and repairing other metal, wood or fibreglass marine craft. Activities include: aligning, fitting, erecting and fastening together previously prepared parts and sub-assemblies of metal or wooden ships' structures; laying out and shaping wood and fibreglass parts for marine craft; installing, repairing and adjusting engines, auxiliary machinery, accessories, rigging and equipment, using common or special hand and power tools, jacks, lifting and other equipment. Occupations concerned with forming and shaping metal plates and structural metal parts for ships are classified in Unit Group 8337- BOILERMAKERS, PLATERS AND STRUCTURAL METAL WORKERS. Occupations concerned with moulding, laminating or finishing fibreglass boat hulls or parts are classified in Minor Group 857- FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, RUBBER, PLASTIC AND RELATED PRODUCTS.

**Shipbuilding Occupations
8592-110 through 8592-178**

8592-110 LOFTSMAN(ship & boat bldg.) DPT:261
GED: 4 SVP: 8 EC: 1 PA: L 3 4 7

Lays out lines of ship to full scale on mould-loft floor and constructs templates and moulds to be used as patterns and guides for layout and fabrication of various structural parts of ships:

Lays out full-scale portions of ship's plan, working from drawings and tables of offsets. Marks frame lines and other reference lines on loft floor with marking instrument. Measures dimensions between lines and prepares table of offsets. Compares prepared tables with tables on drawings. Constructs template, using knowledge of geometric construction, and hand tools and woodworking machines, such as power saws, jointer, and drills. Marks templates with identifying data and instructions, such as number of pieces to be made, type and weight of stock, and location for installation, following drawing specifications.

May construct full-scale-wood mockups of ship's parts and sections for use as guide in shaping or positioning parts. May lay out and construct wooden plugs (master patterns) used in making moulds for hulls and decks of fibreglass boats.

8592-114 SHIPWRIGHT, METAL(ship & boat bldg.) DPT:261
GED: 4 SVP: 8 EC: B 5 6 PA: H 2 3 4 7

Plots reference points, and erects and aligns framework and other metal parts of ship's structure during construction or repair, following drawings and other specifications:

Sights, plots, and marks reference points and lines on drydock or way to maintain alignment of vessel, using transit, plumb line, tapes, and levels. Aligns keel and bilge blocks, and keel plates on berth. Makes identification marks on structural members such as frames, keel, stem and stern post, to guide assembly and erection. Directs hoisting of members into position and secures them with bolts or clamps for welding or riveting. Directs tack-welding of structural members. Locates and marks datum points and reference lines on ship's hull for locating machinery and other equipment. Aligns and supervises erection of parts and installation of equipment; such as, masts, booms, boat davits, compasses, hawse and chain pipes, anchor windlasses, bow thrusters, stabilizers, fairleads, bollards, shell and deck plates, superstructure houses, and deck fittings.

8592-118 SHIPWRIGHT, WOOD(ship & boat bldg.) DPT:261
GED: 4 SVP: 8 EC: O 5 6 PA: H 2 3 4 7

Constructs and repairs ships, following diagrams and blueprints, using hand and power woodworking tools:

Sights, plots and marks reference points and lines on drydock or way to maintain alignment of vessel during construction or repair, using transit, plumb bob, tapes and levels. Builds supports, such as bilge and keel blocks, cradles, and shoring for ships in drydock, marine railway,

shipway or building dock. Positions and secures blocking and other structures on dock or cradle platform. Aligns vessel over blocks. Establishes reference points and lines on ship's hull for locating machinery and other equipment in accordance with ship's alignment and shape. Fabricates and installs furring pieces, aprons, uprights and other wood framing in ship. Shapes, finishes and installs wooden spars, masts, and cargo and boat booms. Trims wooden frames and timbers, using broadaxe and adze. Spikes or bolts metal fittings, plates and bulkheads to wooden parts of ship, using brace and bits, augers, mauls, and wrenches.

8592-122 PIPE FITTER(ship & boat bldg.) DPT:261
GED: 4 SVP: 7 EC: B 5 6 7 PA: H 2 3 4

Lays out, installs, maintains, and repairs ship's piping systems; such as, steam, heat and power, hot water, hydraulic, pneumatic, and oil lines, following technical drawings, and using hand tools and shop machines:

Plans layout of pipe sections allowing for location of bulkheads, machinery and other obstructions. Bends soft iron rod to make template of pipe layout by hand, to ensure subsequent fitting of pipe sections. Cuts or bores holes in bulkheads and decks, using power saw, or power drill, depending upon type of structure and size of hole required for piping installation. Operates shop machines to cut and thread pipe, and pipe fittings, such as valves, traps and thermostats. Packs pipe with sand to avoid contortion and bends pipe to specified shape, using template and pipe-bending fixture. Bolts pipe-supporting brackets to deckhead or bulkhead. Installs and connects pipes to radiators, laundry and galley equipment, pumps and tanks, using wrench and soldering equipment. Repairs, packs, and adjusts valves. Tests piping system for leaks to ensure system meets specifications, using hydrostatic and other test equipment.

May operate cutting torch and welding equipment to cut holes in steel structures and mount pipe-supporting brackets.

8592-126 SHIPFITTER(ship & boat bldg.) DPT:261
plater.
GED: 4 SVP: 7 EC: B 5 6 7 PA: H 2 3 4

Lays out and fabricates metal-structural parts, such as plates, bulkheads, and frames, and braces them in position within hull of ship for riveting or welding:

Lays out position of parts on metal, working from drawings or templates and using scriber and hand tools. Locates and marks reference lines, such as center lines, buttock lines, and frame lines. Positions and aligns parts, using jacks, turnbuckles, clips, wedges and mauls. Marks location of holes to be drilled and installs temporary fasteners to hold parts in place for welding or riveting. Installs packing, gaskets, liners, and structural accessories and members, such as doors, hatches, brackets and clips. Prepares moulds and templates for fabrication of nonstandard parts.

May tack weld clips and brackets in place prior to permanent welding. May roll, bend, flange, cut and shape plates, beams and other heavy metal parts, using shop machinery, such as plate rolls, presses and brakes.

8592-130 RIGGER(ship & boat bldg.) DPT:261
GED: 4 SVP: 7 EC: B 6 PA: H 2 3 4 5 6 7

Installs and repairs rigging and weight-handling gear on ships, and attaches hoists and pulling gear to rigging to lift, move, and position machinery, equipment, structural parts, and other heavy loads aboard ship:

Forms slings and towing bridles by looping and splicing cable or by crimping metal sleeve around cable end and body of cable, using crimping tool. Splices and ties rope to form nets, ladders and other rigging, using marlin spike. Installs hooks, swivels, and turnbuckles in rigging. Reeves lines through blocks and pulleys. Sews canvas or leather covers on rigging at friction points, using sail twine, sailmaker's palm and needle, and sewing machine. Selects and attaches gear, braces and cushions, according to weight and distribution of load, availability of hoisting machinery, and presence of obstacles, such as ships-structural members. Signals workers operating cranes or other equipment to move load. Installs beam clamps, pad eyes, gallow frames and other supporting structures for rigging gear. Controls movement of heavy equipment through narrow openings or in confined spaces, using jacks, pulley blocks, chainfalls, and rollers. Lays out and handles lines, snubs lines on cleats or bollards or hauls in lines with capstans to assist in ship-drydocking operations. Installs and

repairs ships' rigging, such as mast or antenna rigs, small-boat-handling gear, and winch or windlass rigging. Installs masts, booms, yardarms, and gaffs, working aloft as required. Rigs and hangs scaffolds and stages that require blocks and pulleys. Tests cargo gear, such as lines, chains and pulleys, using strength- testing equipment. May layout, cut and assemble sails and tarpaulins. May make rope bumpers and fenders for barges and tugboats by winding layers of rope around steel cable.

8592-134 ENGINE FITTER(ship & boat bldg.) DPT:261
ship-machinery installer.
 GED: 4 SVP: 7 EC: B 5 6 PA: M 2 3 4

Installs and repairs ship machinery and auxiliary equipment, working from drawings and other specifications: Lays out passage holes on bulkheads, decks, and other surfaces for shafting and piping systems. Installs propelling machinery, auxiliary motors, ventilating equipment, steering gear, capstan and winches, using hand and power tools and measuring instruments. Installs below-deck auxiliaries; such as, evaporators, stills, heaters, pumps, condensers and boilers, and connects them to steam-pipe systems. Tests and inspects installed machinery and equipment during dock and sea trials. Dismantles and inspects malfunctioning machinery and replaces worn or defective parts.

May set up and operate machine shop tools, such as lathe and drill press to fabricate replacement parts.

8592-138 JOINER(ship & boat bldg.) DPT:381
boat joiner.
 GED: 3 SVP: 7 EC: B 6 PA: M 2 3 4 7

Fabricates, assembles, installs and repairs wooden furnishings in ships or boats, following blueprints and using hand tools, power tools, and measuring instruments:

Lays out, cuts, assembles and installs wooden parts, such as deckhouses, doors, sashes, paneling and refrigerator doors, using hand and power-woodworking tools, scales, square, and calipers. Installs hardware and gaskets, using screwdriver. Cuts, fits and installs glass in skylights, cabins and other parts of ship or boat. Moulds, bends and laminates wood to form parts of ship, using steam chambers, clamps, glue and jigs. Fabricates, assembles, and installs desks, chairs, cabinets, using woodworking machinery; such as, jigsaws, planers, jointers, mortisers and tenoners. Shapes irregular parts to fit, and joins matched-grain wood such as oak, mahogany and teak.

May install fibreglass or cork insulation on sides of ship below waterline to prevent condensation. May lay linoleum on deck or ladder treads, using adhesive, spreaders and linoleum-cutting tools.

8592-142 PNEUMATIC-TOOL OPERATOR(ship & boat bldg.) DPT:684
 GED: 3 SVP: 6 EC: O 5 6 PA: H 2 3 4

Chips, cuts, caulks, drills, reams or rivets steel or aluminum plates, beams, or other structural parts of ships under construction or repair, performing any combination of the following duties:

Caulks seams of overlapping plates by guiding pneumatic-hammer chisel along seam to pound edge of overlapping plate into surface of adjoining plate, or packs caulking material between plates prior to riveting, using wedges, hammer, and pneumatic-caulking tool. Gouges out reverse side of welded seam in preparation for second weld, using pneumatic-hammer fitted with diamond-shaped chisel. Drills, reams, and countersinks holes for rivets, bolts, or pipes in plates and beams, using pneumatic equipment. Heats rivets in forge, places rivet in hole, and holds steel bar against head of rivet while shank is hammered down from opposite side. Tests tanks and compartments for leaks, using hydrostatic and pneumatic-testing equipment. Sharpens bits and chisels, using bench grinder.

May be designated according to specific duty assigned; for example, Caulker
 Chipper
 Chipper and Caulker
 Driller
 Riveter

8592-146 MARINE-RAILWAY OPERATOR(ship & boat bldg.) DPT:662
marine-slip operator; ways operator.
 GED: 3 SVP: 5 EC: I PA: M 4 7

Operates power-driven winch of marine railway to pull ships and other vessels from water preparatory to underwater repairs:

Observes signals, starts winch and pulls lever to control movement of cradle platform down inclined plane and into water to specified depth. Signals ship operator to align and secure vessel over keel blocks fixed to center line of cradle platform. Observes signals and operates winch to haul platform and vessel up inclined plane. Observes gauges or meters, and moves winch lever to start, stop, and alter speed of platform to allow bilge blocks to be positioned. Secures platform in specified location by engaging mechanical-locking devices. Repairs and maintains winch and hauling equipment, using hand tools and lubricants.

May maintain air compressor used for sandblasting, paint spraying and pneumatic tool operations, using hand tools, testing equipment, lubricants and solvents. May operate automatic oil-fired boiler to generate steam that supplies heat or power to shipyard.

8592-150 WOOD CAULKER(ship & boat bldg.) DPT:684
deck filler.
 GED: 3 SVP: 5 EC: O 6 7 PA: M 2 3 4 7

Caulks seams in wooden hull or deck planking of ships, performing any combination of the following duties:

Guides power-caulking tool or pressure gun that automatically forces caulking material or compound into seam. Fills seam with oakum, using caulking iron and mallet. Heats marine glue in melting pot, fills runner (funnel), and guides runner along seam to effect seal. Removes excess glue or compound, using scraper. Smears hot pitch over seam with small mop. Removes old caulking from seams, using reaming iron and mallet. Applies prime coat of paint, using spray gun.

8592-154 SHIPWRIGHT HELPER(ship & boat bldg.) DPT:687
 GED: 3 SVP: 5 EC: B 5 6 PA: H 2 3 4

Helps in constructing and repairing ships and other marine craft, performing any combination of the following duties:

Holds plumb-bobs, sighting rods, and other equipment to aid in establishing reference points and lines of ship. Positions keel blocks, cradles, shoring, and other structures in drydock or shipways to support ship. Obtains tools, equipment, and materials from storage and carries them to work site. Assembles metal fittings. Drills bolt holes in timbers and tightens bolts, using portable-power drill and wrenches. Shapes and installs wooden masts, spars, booms, and timbers, using adze, axe, plane and spokeshave. See also definition for term title, 02-160 HELPER (any ind.).

8592-158 SHIPFITTER HELPER(ship & boat bldg.) DPT:687
plater helper.
 GED: 3 SVP: 4 EC: B 5 6 7 PA: H 2 3 4

Helps in laying out, fabricating and installing metal-structural parts, such as plates, bulkheads, and frames within hull of ship:

Obtains tools and materials from storage and carries them or arranges for their transportation to work site. Aids in establishing reference points on structural members or steel parts for fabricating and assembling. Tightens bolts, using hand and power wrenches. Positions and aligns parts for welding by tightening turnbuckles of guy wires. See also definition for term title, 02-160 HELPER (any ind.). May assemble and fit gaskets, packing and liners. May assist in fabricating parts by feeding or positioning workpieces on bed of shop machines, such as power rolls, presses and brakes.

8592-162 RIGGER HELPER(ship & boat bldg.) DPT:684
 GED: 3 SVP: 3 EC: B PA: H 2 3 4

Helps to assemble lifting devices and to move, lift and position machinery, equipment and structural members of ships under construction or repair:

Positions lifting and moving devices; such as, chain falls, slings, cargo nets, derricks, sheer legs, jacks, rollers, and block and tackle as directed. Heaves in or veers rigging lines, following hand signals, to manoeuvre load in close quarters. Splices rope and wire to fabricate

permanent or temporary rigging, using vise, marlin spike, fid, and mallet. See also definition for term title, 02-160 HELPER (any ind.). May issue and maintain rigging gear in rigging loft.

8592-166 PIPE-FITTER HELPER(ship & boat bldg.) DPT:684
GED: 3 SVP: 3 EC: B 5 6 7 PA: H 2 3 4

Helps assemble and install pipe systems, such as propulsion, heat, power, and fresh water, aboard ships and boats: Obtains tools and equipment for journeymen. Fills pipe with sand or melted resin to prevent distortion during bending operations. Holds pipe during bending and installation. Fits pipe assemblies into place by screwing or bolting them together and connecting them to pumps, tanks and other systems, following specifications or drawings and using wrenches and other hand tools. Immerses pipe in chemical solution to remove dirt, oil, and scale. Cleans shop machines with solvent and rags. Sweeps work area. See also definition for term title, 02-160 HELPER (any ind.).

8592-170 DOCKMAN(ship & boat bldg.) DPT:684
dock pumpman.
GED: 2 SVP: 4 EC: O 4 5 PA: M 2 3 4

Prepares dock platform, positions ship and controls pumps and valves to regulate water level of dry-dock: Positions keel blocks on dock platform and builds bilge blocks as directed by supervisor, using hand tools. Opens flood valves in compartments of floating dry-dock to submerge dock. Takes up docking lines, using winch, or snubs lines over dock bollards to position ship over keel and bilge blocks. Starts pumps to remove water from dry-dock compartments and turns pump controls to keep dock platform on even keel. Opens and closes flood valves on dry-dock when removing ship from dock to keep dock platform on even keel as it submerges. Floods or pumps water from caisson of graving dock, and assists in moving caisson in or out of position across dock entrance. Lubricates and makes minor repairs to dock equipment, such as winches, pumps, and piping systems, using lubricating equipment and hand tools.

8592-174 FENDER MAKER(ship & boat bldg.) DPT:684
GED: 2 SVP: 2 EC: I PA: H 4

Fabricates rope bumpers and fenders by hand, for ships, barges, and tugboats, to prevent damage when bumping into piers or other vessels: Cuts steel wire to specified length to form fender core, using wire-cutting machine. Splices or forms eye at ends of steel wire, using marlin-spike, swage, shackles, and hand tools. Winds cordage around steel-wire core until desired shape and size is obtained. Interlaces top layer of rope with half-hitch or continuous walling knots. Splices rope lanyard into eye of wire core, using fid. May fabricate other types of fenders by lashing used automobile tires onto timber or tree trunk and shackling wire lanyards to ends of timber.

8592-178 ENGINE-FITTER HELPER(ship & boat bldg.) DPT:687
ship-machinery-installer helper.
GED: 2 SVP: 2 EC: B 5 6 PA: H 2 3 4

Helps to remove, repair, and install marine engines; such as, main propulsion, diesel auxiliary, gas, winch, pump, and compressor, using hand tools and lifting devices: Furnishes worker with tools and materials. Assists co-worker to position engine, using chain hoist, crowbars, or rollers. Tightens or loosens nuts and bolts during installation and removal of engines, using hand tools. Cleans working area, machines, and equipment, using cleaning equipment, solvents, and lubricants. See also definition for term title, 02-160 HELPER (any ind.).

Other Marine-Craft Building Occupations
8592-198 through 8592-234

8592-198 BOATBUILDER, WOOD(ship & boat bldg.) DPT:281
GED: 4 SVP: 7 EC: I 5 6 PA: M 2 3 4 7

Fabricates, repairs or modifies wooden boats to specifications and drawings, using hand tools, power tools and measuring instruments: Lays out full scale outline of boat on mould-loft floor, using crayon, scales, and protractor, following drawings and table of offsets. Establishes dimensional reference points on layout and makes templates of parts. Scribes dimensional lines on lumber following templates, and cuts and forms parts; such as, keel, stem, stern post, ribs, and sidings, using carpenter's hand and power tools. Assembles shell of boat by forming steam softened sidings on mould, removing mould, and securing sidings to keel, or by securing ribs to keel and covering ribs with planking. Builds and installs structures; such as, mountings for machinery, shafting and propellor supports, pilot house, cabin, and rudder. Installs decking, mast, booms, and ladders, using hand and power tools, scale, calipers, and gauges. Caulks seams with caulking material. May specialize in a particular aspect of boat construction or repairing and be designated accordingly; for example, Boat Repairer Hull Constructor, Wood

8592-202 MARINE-ENGINE MECHANIC(ship & boat bldg.) DPT:281
GED: 4 SVP: 7 EC: B 5 6 7 PA: M 3 4 6 7

Installs, repairs and adjusts gasoline and diesel engines, and electrical and mechanical equipment in boats, such as cruisers, yachts, tugs and trawlers, following specifications: Positions engine over mounting holes, using chain hoist. Bolts engine to mount and straps fuel and water supply tanks and pumps to cradle, using hand tools. Connects fuel, oil and water lines to engine. Installs and adjusts engine controls, and aligns propellor shaft and propellor. Attaches test instruments, such as tachometer and voltmeter to engine, starts engine, and records and compares operating data for conformity with manufacturer's specifications. Listens to sounds of defective engine to locate faults, and makes adjustments. Dismantles and examines engine, and repairs or replaces faulty parts. Grinds valves, replaces piston rings and fits bearings. Examines boats' fittings and equipment; such as, plumbing, electrical wiring and lighting, pumps, steering gear, propellor and shafting. Replaces defective items or makes repairs, using lathe, drill press and other power and hand tools.

8592-206 OUTBOARD-MOTOR MECHANIC(ship & boat bldg.) DPT:281
GED: 4 SVP: 6 EC: I 5 6 PA: H 3 4 6 7

Analyzes defects, and adjusts or repairs electrical and mechanical components of outboard motors: Disassembles and inspects engine for defective parts, making reference to equipment manuals and parts lists, and using mechanic's hand tools and gauges. Replaces parts, such as gears, magneto points, piston rings and spark plugs, and reassembles engine. Adjusts carburetor mixture and electrical-point settings while engine is running in water-filled test tank. Installs or repairs steering and engine controls. May select and change propeller to increase engine efficiency, based on size and shape of boat hull.

8592-210 BOAT BUILDER, ALUMINUM(ship & boat bldg.) DPT:681
GED: 3 SVP: 5 EC: I 5 6 PA: M 3 4

Assembles aluminum boats, performing any combination of the following duties: Bends edges of precut hull bottom, using roller-bending device and hammer. Fastens sides to bottom, using electric drill and pneumatic rivet gun or welds parts and seams with heliarc-welding equipment. Bolts wooden gunwale strips and transom in place to stiffen hull. Positions parts, such as ribs, stringers, seats and flotation tanks, using rule, template and other measuring devices, and following drawings and work orders. Clamps parts in place, drills holes, and bolts or rivets parts to hull. Drills holes in hull and installs accessories, such as cleats, lights and windshields. Seals seams, using caulking gun and compound. Smooths rough edges and removes excess weld material with hand file or portable grinder.

8592-214 CANOE BUILDER(ship & boat bldg.) DPT:684
GED: 3 SVP: 5 EC: I 5 6 PA: M 3 4

Fabricates wooden hulls of canvas-covered canoes, using hand and power tools, by performing any combination of the following duties: Selects mould according to type and size of canoe to be fabricated and carries mould to work area, or draws full scale outline of canoe on mould-loft floor and establishes dimensional reference points on layout, using measuring instruments. Selects prefabricated wooden parts, according to model specifications, or cuts and shapes rough stock, using band and circular saws. Places parts in steam box or tank for specified interval to facilitate bending. Assembles parts; such as, keelson, stem, transom, ribs and inside gunwales, using clamps, hammer, power screwdriver, and pneumatic stapler. Shapes planking to obtain tight seams, using knife and plane and secures planking to ribs with nails or staples. Trims ribs extending above gunwales, using hand or portable-power saw. Sights over level placed on transom to line up canoe and secures ends of gunwales with screws. Closes in bow of canoe by nailing ends of planking to stem. Sinks and clinches prominent nails, using hammer and swage. Installs outside gunwales, skids and other fittings, using power tools. Sands gunwales, decks, seats and thwarts, using power sander. Sets canoe aside for painting and varnishing. May specialize in particular phase of canoe building and be designated accordingly; for example, Hull Finisher Planker Rib Bender

8592-218 FIBREGLASS-BOAT ASSEMBLER (ship & boat bldg.) DPT:684
GED: 3 SVP: 4 EC: I 5 7 PA: H 3 4

Joins deck and hull sections of fiberglass boats, and installs accessories and parts; such as, hatches, seats, marine hardware and trim: Positions deck on hull and caulks seams, using caulking gun. Lays aluminum gunwale strip along seam and hammers it in place with mallet. Rivets or bolts sections together, using template, electric drill, rivet gun or impact wrench. Locates and marks positions of hardware, seats, hatches and other parts, using rule, template and marking device. Cuts or grinds mounting bases or brackets, using portable electric saws and grinders, and bolts or screws them in place. Drills holes, and bolts accessories, hardware, hatches and other parts in place, using hand tools. Saws, shapes, and fastens trim in place, using jigs, crimping device, adhesives and hand and power tools.

8592-222 OUTBOARD-MOTOR INSTALLER(ship & boat bldg.) DPT:684
motor installer, boat.
GED: 3 SVP: 4 EC: B 5 PA: M 3 4 6

Installs, adjusts, and tests outboard motors for performance according to specifications, prior to delivery of boats: Positions and clamps outboard motor to transom of boat. Drills holes in boat hull and installs steering-cable hardware and cables, using electric drill and hand tools. Connects ignition and fuel-control cables. Examines electrical and mechanical components for missing parts. Operates boat on water during test run to determine engine malfunctions. Adjusts carburetor for optimum performance by turning regulating screws. Sets starter lock, and aligns shift-lever shaft with speed-indicator marks, using hand tools. Writes test report.

8592-226 CANVAS-CANOE COVERER(ship & boat bldg.) DPT:684
canoe canvasser.
GED: 2 SVP: 4 EC: I PA: H 3 4

Covers wooden canoe hulls with canvas: Sinks and clinches any prominent nails in planking, using hammer and swage. Repairs or replaces split or damaged planks, using saw, hammer and nails. Smooths hull, using rasp, spokeshave and power sander. Applies wood preservative to hull, using paint brush. Stretches canvas over hull of canoe by hand, using winch and canvas clamps, or by placing hull into canvas sling and forcing canoe into canvas snugly, using pry and ceiling-mounted shoe. Secures canvas in position with tacks or staples. Trims excess canvas, using scissors. May mix filler (water-proofing solution) in vat and apply filler to canvas, using paint brush and mitt.

8592-230 VENEER LAYER, PLYWOOD BOAT (ship & boat bldg.) DPT:684
layer-up; veneer stapler.
GED: 2 SVP: 3 EC: I 6 PA: M 3 4

Staples successive layers of veneer strips over boat frames preparatory to bonding, to build small laminated hulls: Positions mucilage-faced strips over frames, laying each strip at an angle to lower one and secures strips with stapling machine. Cuts off excess wood, using knife. Inspects hull visually and tactually for gaps. Cuts and fits veneer inserts into gaps, using knife and plane, and secures inserts with staples. Repeats strip laying and stapling until specified thickness is attained.

8592-234 CANVAS-CANOE WATERPROOFER(ship & boat bldg.) DPT:687
GED: 2 SVP: 2 EC: I 4 PA: H 4

Applies filler (waterproofing solution) to canvas-covered canoes, using brush and mitt: Mixes specified quantities of oil, turpentine, white lead and drying compound in vat, using paddle. Brushes waterproofing solution on canvas and rubs solution into canvas, using mitt. May place completed hulls in drying room for specified interval.

8593-PAPER PRODUCT FABRICATING AND ASSEMBLING OCCUPATIONS

This unit group includes occupations concerned with fabricating and assembling paper products; such as, paper bags, boxes, containers, liners and similar items. Activities include: winding, corrugating, facing, folding, creasing, sewing, gluing, cutting, stapling, and fitting interlocking parts.

8593-110 BAG-MAKING-MACHINE SET-UP MAN(paper prod.) DPT:360
GED: 4 SVP: 7 EC: I 5 7 PA: M 4 5 7

Sets up and adjusts bag-making machines to convert materials, such as paper, synthetic film and metallic foil into a variety of containers: Reads work order to determine materials required and details of production run. Directs helper to place rolls of material on machine stands, using overhead electric hoist. Threads material through series of machine rollers. Sets up rollers and nozzles to prepare for interply pasting and side-seam gluing, using hand tools. Installs and adjusts former plate and paper guides, in accordance with specifications. Sets up and adjusts draw rollers to draw paper over former plate, using wrenches. Installs and adjusts cut-off knife and bottom-forming stations, such as blades on slitter bar, transfer roller, center gripper, scoring cylinder, opening roller and fingers, and bottom-forming bars to ensure proper formation of bag bottom. Directs helper to verify that glue reservoirs are topped up and adjusted prior to production run. Aligns guide mark on paper stock under electric eye and sets electric eye to actuate cut-off knife at proper interval. Presses button to start machine, sets automatic counters, and regulates machine speed by adjusting rheostat. Turns hand screw to adjust tension on material feed rate. Inspects finished product for conformance to specifications. Directs helper to lubricate and clean equipment.

8593-114 ENVELOPE-MAKING-MACHINE SET-UP MAN (paper prod.) DPT:680
GED: 3 SVP: 6 EC: I 6 PA: M 3 4

Sets up and maintains battery of automatic machines that make envelopes from die-cut blanks or rolls of paper: Installs gears, plunger, rollers, or other machine parts to accommodate specified size envelopes, using hand tools. Turns setscrews to adjust feeding, folding, gumming, sealing and glassine- applying mechanisms, according to size of envelopes made. Presses button to start machine for trial run and measures dimensions of first piece with rule to ensure conformance to specifications. Observes operation of machines and examines machine parts visually to detect worn parts to prevent machine breakdown. Disassembles machines to replace broken or worn parts, using hand or power tools.

8593-118 CORRUGATOR OPERATOR(paper prod.) DPT:662
corrugating-machine operator.
GED: 3 SVP: 6 EC: I 5 PA: M 4 7

Operates machine to corrugate and face paperboard for containers: Positions rolls of paperboard on machine feed rack, using hydraulic hoist. Threads paperboard through feed, tension, corrugating and gluing rollers, and fills glue reservoirs. Presses button to start machine and turns dials, wheels and valves to adjust machine running speed, tension on pressure rolls, temperature of drying belt and to synchronize speed and alignment of feed rolls. Maintains close check at both ends of machine to ensure paper produced meets quality standards. Records production data from yardage indicator on machine. Explains procedures to crew members at various work stations, such as loading, off-loading and changing set up to avoid delays or interruptions in production. May attend production meetings, and plan and set-up production schedules for corrugating machine. May maintain and repair corrugating machine under direction of production foreman. May operate machine that corrugates and combines two or three sheets, or a machine that lines paperboard with paper only and be designated accordingly.

8593-122 CYLINDER PRESSMAN(paper prod.) DPT:680
cutting-and-creasing-press operator; cylinder-press operator.
GED: 3 SVP: 5 EC: I PA: M 4

Sets up and operates cylinder press that scores and cuts paperboard sheets into box or container blanks: Installs specified chase (cutting and scoring die) on flat-bed of machine, using hand tools. Glues sheet of paperboard on machine cylinder by hand or by pushing button, if automatic, to press design of die in sheet, and cuts paperboard from around die impression on sheet, using knife, to form male portion of die. Adjusts feed rollers on automatic stacker, using hand tools, and presses button to start machine. Measures cut-scored blanks to verify dimensions against work order, using tape measure. Feeds odd size paperboard sheets into machine by hand. May print data on scored box blanks, taping chases on flat-bed with masking tape and replenishing ink supply when necessary. May tend unit that folds scored boxes, and glues side flap closed, aligning folding devices and adjusting feed rollers, according to size of blanks, using hand tools, and filling glue reservoir with premixed glue. May direct helper. May maintain production record sheet.

8593-126 PLATEN PRESSMAN(paper prod.) DPT:680
platen-press operator.
GED: 3 SVP: 5 EC: I 5 PA: M 4

Sets up and operates automatic platen press to cut, crease or emboss paper or cardboard for such uses as labels, wrappers or carton blanks: Selects and installs specified chase (cutting-creasing die) or embossing die on upper press bed, using hand tools. Releases, pulls out and turns over upper press bed manually. Positions chase or dies on bed and fastens them to bed with toggle catches, using toggle key to tighten and adjust catches. Turns bed over and slides bed into press. Locks bed into position, turning lever. Pushes button to jog press and manually feed single sheets of paper under chase. Removes and examines proof sheet for registration and depth of embossed, cut or creased parts to ensure conformity to specifications. Resets position of chase or dies, using toggle key to loosen or tighten catches and correct deviation from specifications. Adjusts height of lower press bed surface with glued sheets of paper or matrix board to set depth of cutting, creasing or embossing, using rubber cement brush and knife. Locks bed in position. Adjusts feed bands and guide, according to sheet size, using hand tools. Pushes button to start press and observes sheets travelling from feed end, under dies, to delivery end. Examines sample sheets to ensure constant registry. Turns hand controls to adjust and synchronize rate of feed with speed of press and bed movement. Removes and stores dies or chase at end of run.

8593-130 PARTITION-ASSEMBLY-MACHINE OPERATOR(paper prod.) DPT:582
GED: 3 SVP: 5 EC: I PA: L 4

Operates machine that automatically fits pre-cut cardboard sections together to form complete partitions for cardboard cartons: Installs and adjusts stripper bars, feed dogs, side and finger guides,

back stops, and ejector bars on machine table, and receiving fingers and push bars on rotating partition assembling wheel, using rule, gauges, and wrenches. Adjusts timing gear settings to synchronize movement of partition sections from machine table into sections in assembling wheel, using wrench. Fills magazines with partition sections and pushes button to start machine. Observes feeding and assembling operations, and adjusts machine to form partitions to specifications. Maintains production records.

8593-134 CRÊPING-MACHINE OPERATOR(paper prod.) DPT:682
GED: 3 SVP: 5 EC: I 5 PA: M 4

Operates machine to form crêpe paper from smooth paper: Mounts roll of paper on machine with assistance of other workers. Turns valves to regulate volume of glue or dye into pans and volume of steam to drying cylinders or steam drum. Starts machine and threads sheet through glue or dye pans, feed rolls, crêping (crinkling) roll and blade, rolls that remove excess glue or dye, drying cylinders or steam drum, tension rolls, and onto belt that travels around drying drum or onto rewinding roll. Moves controls to position crêping blade above crêping roll in proper contact with moving paper to crinkle paper. Turns valves and controls to regulate temperature of steam-heated rolls, tension of paper, and pressure of rolls, to prevent tearing or folding of paper. Cuts paper, using knife, and removes roll of crêpe paper when required amount has been rewound.

8593-138 SAMPLE-CONTAINER MAKER, HAND(paper prod.) DPT:684
GED: 3 SVP: 5 EC: I PA: S 4 7

Fabricates sample paper or paperboard products, such as bags, boxes and display packages, by hand, for use by sales staff: Cuts, folds and fastens together paper or paperboard container parts. Adds eyelets and attaches handles, according to specifications, using drafting tools, rulers, scissors, eyelet and grommet fastener, glue, brushes and hand stapler. Hand paints lettering and decorative designs on sample containers, using paints and brushes, according to customer specifications. May select materials and make wrappings for paper towels, napkins and tissues to be used as sales samples.

8593-142 CARTON-FORMING-MACHINE OPERATOR(paper prod.) DPT:682
GED: 3 SVP: 4 EC: I 5 PA: M 3 4

Operates machine that forms continuous rolls of paperboard or flat blanks into finished cartons for packing merchandise: Adjusts forming bars, roller knives and cutter to accommodate size of box to be shaped, using wrenches and by tightening wing nuts. Fills glue reservoir, and positions and secures rollers, using hand tools, to dispense glue. Mounts paper roll and adhesive roll on machine spindle, using hoist or hydraulic lift. Threads paper through feeding mechanism. Presses button to start machine, and watches operation. Turns dial indicator to synchronize speed with case packing operation. Clears any blockages which may occur. Mounts perforating roll to form pre-cut forming lip on carton.

8593-146 SLITTER-CREASER OPERATOR(paper prod.) DPT:682
slitter-scorer.
GED: 3 SVP: 4 EC: I 5 PA: M 4 7

Operates machine to slit, crease, cut, score or trim sheets of plain, laminated or corrugated paperboard to specified dimensions: Turns screws and moves picker feed-bar and feed-table guides to accommodate size of sheets specified. Positions and fastens slitting and slotting disks, cutting knives or dies, according to job specifications, using wrenches. Installs scoring disks on shaft and turns setscrew to adjust pressure. Presses buttons to start machine and synchronize speed of travelling knives, scoring and slitting disks with speed of automatic feed. Measures sample with tape rule to verify dimensions of cut-scored blanks with work order and adjusts position of knives, dies or disks if necessary. May record number of blanks produced.

8593-150 ENVELOPE-FLAP-CUTTING-MACHINE SET-UP
MAN(paper prod.) DPT:680
 GED: 3 SVP: 3 EC: 1 PA: L 4

Sets up machine that cuts edges, flaps, notches, or openings in envelope blanks or envelopes:
 Bolts specified cutting die onto machine ram, using hand tools. Turns handwheel to adjust stroke of ram, according to depth of die. Turns setscrews to adjust machine guides and stops to accommodate specified size paper stock, using ruler and screwdriver. Pushes button and depresses pedal to start machine for trial run. Compares first sample against standard to verify accuracy of machine set-up.

8593-154 TUBE-WINDING-MACHINE OPERATOR(paper prod.) DPT:662
core winder; paper-cone winder.
 GED: 3 SVP: 3 EC: 1 5 PA: M 4 7

Operates machine that winds continuous strips of paper or cardboard into such products as, containers, cores, can bodier and mailing tubes: Mounts rolls of paper or cardboard onto feed spindle of machine and locks in place with clamps. Threads paper or cardboard through machine guides onto forming rollers. Positions core or form on chuck of machine and wraps end of paper or cardboard around it. Fills glue reservoir and sets thermostatic control to regulate temperature of glue. Adjusts machine guides, stroke, cut-off, angle of spiral, tension on pressure rollers, and synchronizes speed with rate of feed, using hand tools. Presses button to start machine that rolls, glues and overlaps paper or cardboard to form tubes or other products. Observes operation to make necessary adjustments. Examines tubes for defects. Stops machine to remove jams manually or with knife.

8593-158 AUTOMATIC-PAPER-CUTTING-MACHINE OPERATOR(paper prod.) DPT:684
 GED: 3 SVP: 3 EC: 1 PA: M 4

Operates automatic paper-cutting machine to cut paper into smaller sheets:
 Loads supply of paper sheets into mouth of machine manually. Pushes button to start main motor drive. Turns control dials and presses buttons to set dimensions of paper, according to specifications. Pulls safety bar up with one hand and cutting control bar down with the other to start cutting operation. Presses pedal to adjust clamp for correct pressure on stock being cut. Stacks cut paper aside. Cleans, oils and greases machine. Changes cutting knives when dull.

8593-162 REVENUE-STAMP CUTTER(paper prod.; print. & pub.) DPT:584
 GED: 2 SVP: 3 EC: 1 PA: L 4

Cuts, stores and issues revenue stamps:
 Cuts sheets of stamps, using paper-cutting tool, adjusting guides, according to particular stamps, turning hand screws. Turns controls to lower blade that cuts into stamps. Stocks cut revenue stamps and labels in vault and issues them on request.
 May keep daily reports on number of sheets cut and sequence of serial numbers for production control purposes. May print code number on revenue stamps, using offset press.

8593-166 BOX MAKER, PAPERBOARD(paper prod.) DPT:684
carton assembler.
 GED: 2 SVP: 3 EC: 1 PA: M 4

Fabricates cartons, boxes and other paper products from laminated, corrugated or plain paperboard materials, using automatic gluing or wire-stapling machines:
 Feeds blanks or paperboard sheets into machine. Tacks or stitches edges together to form cartons, using stapling or gluing device. Assembles and fits slotted pieces together manually to form partitions for cartons and inserts partitions in open container. Counts specified number of cartons and ties them into bundles for shipment, using twine or wire. Glues linen strips to tops and backs of boxes to form hinges.
 May glue strips of cellophane on carton to form windows in container. May paste or glue paper edgings or linings to cartons to form trimmings.

8593-170 BAG-MAKING-MACHINE TENDER(paper prod.) DPT:685
 GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends one or more machines that automatically convert plain or wax paper, or synthetic film to form bags:
 Threads material from roll through guides and rollers to printer, cutters, folding device, gluer, or electric sealer. Presses button to start machine, observes operation, and adjusts machine to ensure uniform printing, shearing, folding, gluing, or sealing operations. Selects sample bags and inspects product for conformance to specifications.
 May tend machine that wraps paper band around bundles of paper bags. May tend machine that automatically inserts tin ties into tops of bags used to package products, such as coffee.

8593-174 PAPER-BOX-MACHINE TENDER(paper prod.) DPT:665
 GED: 2 SVP: 3 EC: 1 PA: M 4

Tends machines that fold, cut and glue box blanks or pasteboard rolls to form containers:
 Adjusts machine guides and folders for specified size box. Replaces empty tape rolls and refills glue container. Threads pasteboard through machine guides. Feeds scored and cornered box blanks into hopper of machine. Discards blanks that do not meet specifications. Informs crew of details of production run, such as quantity and any special features. Pushes button to start machine and makes necessary adjustments to maintain quality of product. Assists in removing boxes from machine onto shipping pallets to clear machine area for next run. May tend machine that forms particular type of box and be designated accordingly; for example, Caddy-Forming-Machine Tender

8593-178 CORE MAN(pulp & paper) DPT:685
core cutter.
 GED: 2 SVP: 3 EC: 1 5 PA: L 4 7

Tends machines that cut, ream and slot cardboard-paper-roll cores, according to work order specifications, performing any combination of the following duties:
 Installs and aligns cut-off saw, reamer and slot cutters in machines, and adjusts stops, according to length and diameter of core, using rule and wrench. Cuts core to length with circular saw. Pushes core along feeder trough of reamer to ream out ends. Feeds core into cutters of slotting machine to cut slots in core ends. Inserts metal caps in ends of cores to coincide with slots, using hammer or hydraulic ram. Removes damaged caps from reclaimed cores with puller, and hammers out dents. Maintains inventory of cores available, by length and diameter.

8593-182 FOLDING-MACHINE TENDER(paper prod.) DPT:685
 GED: 2 SVP: 3 EC: 1 5 PA: M 4

Tends machines that automatically cut continuous rolls of paper and related material into sheets of specified length, fold, and interlock them to form products, such as paper towels, diapers and napkins:
 Threads material through rollers and guides, and tapes end to that of previous roll. Changes embossing rolls, using hand tools, and adjusts tucker, gripper, feed rolls and dial that regulate number of items per bundle, according to type of material and work order. Fills glue reservoir. Presses button to start folding machine, and monitors operation to ensure uniform gluing, cutting, perforating and folding of product. Lubricates machine and makes minor adjustments, using hand tools. Removes product from machine outlet, and places in semi-automatic-banding machine. Fills and seals cases for shipment.
 May prepare production reports. May be designated according to type of machine tended, or according to article folded; for example, Diaper-Machine Tender
 Towel Folder-Bander

8593-186 PAPER-TWISTER TENDER(paper prod.) DPT:685
 GED: 2 SVP: 3 EC: 1 5 PA: M 4

Tends one or more machines that twist paper strips into twine:
 Slides roll of paper of specified width onto spindle of machine. Wraps twine leader around spool, and threads end through guide and twisting die. Untwists end of leader and splices it to end of paper strip. Starts machine and observes operation to detect uneven twisting

and winding of twine. Verifies diameter of twine against specifications, using micrometer, and adjusts pressure on twisting die, turning wheel. Cuts twine and removes filled spool. May thread two or more strands of twine through die to make ply twine. May twist paper strips around wire to form protective covering.

8593-190 SCORER(paper prod.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: M 4

Tends machine that scores cardboard blanks along lines where they are to be folded or cut, to form boxes or containers: Positions scoring disks on shaft, according to work order specifications, turns setscrew to secure them in place, and turns wheel to adjust pressure on disks, using hand tools. Starts machine and loads blanks into hopper or pushes blanks into scoring roll by hand. Removes scored blanks and stacks them on pallets.

8593-194 TAG-MACHINE TENDER(paper prod.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: L 4

Tends machines that automatically cut, print, perforate and punch holes in tags, labels and index cards: Threads paper stock between machine guides that pass paper under printing roll, corner cutter, punch, eyeletter, shears, patch unit and perforator. Turns mechanical counter dial to zero. Verifies all information to be printed on tags, labels or cards, such as number, size and grade. Adjusts machine attachments for specific operation, using hand tools. Starts machine that prints specified data, trims corners, punches and reinforces holes with paper or metal eyelets, cuts size, and records quantity produced, according to counter. Examines products for defects as items drop into boxes from conveyor. Performs minor maintenance on machinery, using hand tools, and notifies supervisor when major repair is necessary. May tend imprinting machine that stencils labels and boxes.

8593-198 BAG MAKER, HAND(paper prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4

Forms bags or specialty covers, by hand, from synthetic film, paper sheet, paper tubing or other materials, by either of the following methods:

1. Folds ends of paper tubes ready for gluing. Opens folds at one end of tube or folds end of sheet and brushes glue around edges. Closes folds along creases and presses them by hand or using wooden block.
2. Seals sides and ends of synthetic film, waxed paper or other materials, using hand-iron or heat-sealing device.

8593-202 COLOUR-CARD MAKER, HAND(paper prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Assembles colour cards, for advertising purposes, from coloured sheets, using paper cutter and glue: Cuts coloured sheets into cards of specified dimensions, using paper cutter. Sorts and stacks cards according to colour. Mounts card on folder by either of the following methods: 1. Positions cards in handpress according to code numbers. Brushes glue on back of cards, positions folder over cards and pulls lever to close press and glue cards to folder. Removes folder from press. 2. Brushes glue on blank spaces of preprinted colour folder. Positions colour cards on blank spaces according to code, and presses cards to folder manually. Stacks cards on table or pallet. May feed electric duplicating machine to print identifying data on labels. May maintain records of number of folders completed.

8593-206 ENVELOPE MAKER, HAND(paper prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Makes envelopes by folding, gluing, and finishing die-cut blanks, by hand, for custom orders: Scores envelope blanks, using spatula or scoring tool. Folds envelope blanks, according to pattern, and creases folds by hand or with spatula. Applies gum to edges of flaps with brush or applicator, and seals flaps before gum dries, leaving one glued flap open. Folds down open flap when dry. Packs completed envelopes in boxes. Stacks boxes on pallet for removal. May tend machines that affix clasps, reinforcing patches, snap fasteners and string or wire ties to envelopes. May attach cellophane strips or other decorations to envelopes by hand.

8593-210 GREETING-CARD ASSEMBLER(paper prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles greeting cards, performing any combination of the following duties: Folds printed sheets or cards into various shapes or designs manually. Attaches seals, lace, sachet bags, ribbon or other paper, metallic or plastic inserts on cards, using glue, tape, or staples. Applies glue to edges or corners of folded cards with brush. Glues and inserts sheets on greeting cards. Examines finished cards for defects. Trims cards to size, using paper cutter. May assemble programs, wedding and business invitations.

8593-214 PAPIER-MÂCHÉ MOULDER(paper prod.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4

Makes papier mâché forms, such as arms, legs or busts used for display of apparel, by hand: Greases inside of mould halves, with brush, to prevent sticking. Pastes one side of papier mâché sheets and tears into pieces to fit mould. Lays unpasted side of sheet pieces against inside of mould and presses them in place by hand, leaving overlap at side of mould to serve as joint with other half of mould. Adds layers of coated paper to build up form to desired thickness, fitting and smoothing each layer to mould. Fits halves of mould together, pastes and presses overlap of each half of form together, and removes completed form from mould. Finishes edges of form by pasting paper to openings.

8593-218 AUTOMATIC-TUBE-MACHINE TENDER(paper prod.) DPT:665
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that automatically forms paper tubes or spools: Threads paper through rollers and guides, and tapes end to previous roll. Adjusts guides, cutting blade and auxiliary devices, according to specifications, using hand tools. Fills glue reservoir and turns valve to regulate temperature and flow of glue. Presses button to start machine and observes operation to detect defects. Adjusts machine to correct malfunctions.

8593-222 PAPER-TUBE-PRODUCTION HELPER(paper prod.) DPT:665
GED: 2 SVP: 2 EC: 1 5 PA: M 3 4

Helps machine operators in production of paper or cardboard tubes: Mounts roll of paper or cardboard on machine spindle, using hoist, and secures in place with clamps, using hand tools. Glues or splices end of new roll to previous roll. Assists in threading paper through machine and in making adjustments to guides and cutting blade. Replenishes glue reservoir and cleans glue pumps. Examines tubes ejected from machine for defects, such as excess glue and open seams. See also definition for term title, 02-160 HELPER (any ind.).

8593-226 BOOK-COVER CREASER(paper prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends powered machine that creases book cover blanks along lines where they are to be folded: Positions and secures single blade and pressure rollers on machine, and adjusts machine stops that control length and width of crease. Feeds book cover blanks into machine by hand on upstroke of creasing blade. Removes creased book cover blanks and stacks them on skid.

8593-230 BOOK-JACKET-COVER-MACHINE TENDER (paper prod.) DPT:685
laminating-machine tender.
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that glues paper and plastic film together for such uses as, book jacket covers or menu covers: Mounts rolls or sheets of paper or card and plastic film on machine holders, or in feeder trays, using hoist, and installs roll of adhesive tape on either side of machine. Splices ends of paper, plastic and tape to ends of previous rolls. Replenishes glue reservoir. Adjusts feed-bar, fingers and machine guides, and cutting mechanism, according to specifications. Presses button to start machine. Depresses foot lever to

control speed. Observes machine operation as machine glues paper and plastic film together, cuts to size, and tapes edges. Measures sample to verify dimensions. Makes minor adjustments and clears jams.

May mix powder and water in mixer to make adhesives.

8593-234 BOX FINISHER(paper prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Finishes paperboard boxes by one or any combination of the following methods, for decorative or protective purposes:

1. Loads cardboard extension pieces into mouth of machine that glues oversized pieces of cardboard to box top or bottom. Replenishes glue reservoir. Pushes button to start machine and observes machine in operation to detect malfunctions and to ensure uniformity of product. 2. Turns wheel to adjust angle and position of guides on machine, according to size of sheet. Positions blanks, labels or sheets against guides under cutter, and depresses pedal to lower blade that cuts out V- or L- shaped corner. Turns stock to bring each corner into position for cutting, according to specifications. 3. Mounts rolls of paper on holder, screwing in correct face plate by hand. Threads paper through guides and over glue roller. Selects and mounts holding block (form) on plate. Positions uncovered box over holding block, draws end of glue-coated paper forward and presses down in line with edge of box. Smooths paper to sides of box. Depresses pedal to lower blade or uses shears to cut paper to specified length. Folds and turns paper over box edges and corners. 4. Places box parts on glued wrapper and positions them under plunger of machine. Presses pedal to lower plunger that forces box part and wrapper down past series of brushes that seal wrapper onto box part. 5. Positions box parts onto glued wrappers conveyed by belt that feeds box parts into machine equipped with automatic plunger that smooths wrapper around box.

8593-238 BUTTON-ENVELOPE-MACHINE TENDER (paper prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that punches holes, trims or notches ends, and affixes clasps, reinforcing patches, fasteners and string or wire ties to envelopes or paper bags:

Turns screws to adjust guides and stops on machine to accommodate specific product, using hand tools. Mounts rolls of tape on machine spindles or mounts and threads string through eyelets, and cuts to desired length, using fixed blade. Loads clasps, fasteners, buttons or patches into machine hoppers. Places envelopes or bag against machine guides and stops, and positions string or wire ties. Depresses lever to start punching, cutting, fastening or reinforcing operation. May stack finished envelopes or bag on pallet for inspection.

8593-242 CARDBOARD-LINING-MACHINE TENDER (paper prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends machine that glues paper over cardboard and cuts cardboard to desired length:

Installs roll of paper on machine, using hoist. Turns screws that regulate distance between feeding and pasting rollers to accommodate cardboard, and adjusts end shears that cut board to required length. Replenishes glue reservoir. Threads paper from roll through guide and gluing rollers. Moves lever to adjust thermostat that regulates temperature of heated rollers. Presses button to start machine. Pushes cardboard piece into feed end of machine. Removes and stacks completed pieces.

May dilute prepared glue with water, using electric mixer.

8593-246 COLOUR-CARD MAKER, MACHINE(paper prod.) DPT:685
chip-applying-machine tender; mounting-machine tender.
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Tends machine that cements paint colour samples to colour sample cards or folders:

Loads printed colour card blanks and specified number, size, colour and type of paint colour samples or chips into feed racks of machine, according to work orders. Fills reservoir with liquid adhesive from a container or with cement, using putty knife. Adjusts guides to accommodate cards or folders, using wrench, to loosen or tighten

holding nut. Depresses pedal to start machine, observes operation to detect malfunctions and examines full cards or folders to ensure conformity to standard. Informs supervisor of poor alignment of samples, jammed paper or mechanical failures. Removes completed cards from machine and stacks them aside.

May pack cards or folders in containers for shipment.

8593-250 COMB-CUTTING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends one or more machines that cut bookmatch combs (blanks) from cardboard rolls:

Fastens metal hub to center opening of cardboard roll, using hand tools, and inserts turning-shaft in hub. Pushes roll onto let-off rack. Threads cardboard strip through machine guides and pressure rolls. Adjusts dies that cut and trim cardboard to specified dimensions. Pushes button to start machine and observes operation to detect defects, such as insufficient punch pressure, non-cuts, and incorrect dimensions. Makes minor adjustments to machine, using hand tools.

8593-254 DRILL-PUNCH TENDER(paper prod.) DPT:685
punch-press tender, paper.
GED: 2 SVP: 2 EC: 1 6 PA: L 4 7

Tends press to drill or punch holes and slots in paper goods, such as paper stock, paperboard, envelopes and pamphlets:

Reads work order to determine spacing and number of holes or slots to be made. Starts machine and positions stacks of blanks against backstop and end guides. Depresses pedal to activate ram which lowers drills or die to punch or drill paper. Removes paper from machine and stacks items drilled on pallets. Inspects finished items for conformance to specifications, visually or using gauges or template. May adjust spacing of drills, depth of stroke, position of backstop and guides, according to size of item, and change dull drills, using hand tools.

8593-258 ENVELOPE-MACHINE TENDER(paper prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that cuts, forms and glues envelopes from paper blanks, performing any combination of the following duties:

Loads envelope blanks in automatic feed rack, or positions blanks on machine table against guides and stops. Installs roll of transparent paper on machine, using electric hoist, when producing window envelopes. Replenishes glue reservoir. Depresses pedal or moves lever to lower ram which forces cutting die through stock to cut edges, flaps, notches, or openings. Presses button to start machine that glues, folds and dries envelopes. Inspects envelopes to detect defects in cutting, forming, and gluing. Removes jammed envelopes from rollers. Observes operation of machine for malfunction. Counts pack of envelopes periodically to verify accuracy of mechanical counter. May place envelopes in boxes, and stack on pallets.

8593-262 MATCH-BOOK-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that forms match books:

Aligns combs on conveyor belt to feed machine. Threads end of cardboard roll into feed magazine. Threads stapling device manually, placing roll of wire on spindle, securing in place, threading wire through tension and feed guides. Observes machine operation, and adjusts feeding mechanism by turning knobs to align slitting cutters and feed slot, as necessary. Pulls sample match books apart to examine for faults.

May perform minor maintenance, using hand tools.

8593-266 MILK-BOTTLE-CAP-MAKING-MACHINE TENDER (paper prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: M 4

Tends machine that automatically prints, cuts and waxes paper caps for milk bottles and staples pull-tabs on caps:

Positions roll of cardboard paper on machine. Sets and clamps type into machine holder. Adjusts level of ink in reservoir and quantity and temperature of wax, by turning valves. Fills slots with staples and

tabs. Starts machine and examines random samples of caps for defects. Performs minor maintenance on machine, using hand tools.

8593-270 PAD GLUER, MACHINE(paper prod.) DPT:685
stripping-machine tender.

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that glues fabric or paper strip over back edge of unbound paper products, such as legal tablets, notebooks and ledger paper.

Places interleaves with cover at bottom and top of stack of paper. Turns handwheel to adjust machine-head pressure plate, according to thickness of item being processed. Places roll of gummed tape on reel and threads end through feed guide and rolls. Turns screws to adjust tension springs that bring pressure on tape to force sticking, using hand tools. Starts machine and feeds items onto machine-feed conveyors. Removes completed product from machine conveyor and stacks on skids.

8593-274 PAPER-BAG-MACHINE TENDER(paper prod.) DPT:685

GED: 2 SVP: 2 EC: 1 PA: M 3 4

Tends machines to form paper bags, performing one or any combination of the following duties:

Carries stack of paper tubes from pallet to loading tables. Pushes button to start machine, and feeds paper tubes against machine guides. Depresses foot pedal to move mechanism that forms valve in one corner of paper tube. Slides tube under rollers and onto conveyor for reinforcing. Presses button to start machine that cuts and applies glue to sleeves. Glues paper sleeves to valves, to reinforce bags by inserting glued edge of sleeve under edge of valve, refolding and pressing down valve manually. Counts and stacks tubes on pallet for bottoming. Pushes button and feeds tubes into machine that folds and glues bottom ends of tube. Inspects bags for defects in folding and gluing and separates rejected bags. Depresses foot pedal of hydraulic press to flatten bags, and counts bags for baling. Disassembles defective bags, ripping bottom from tube manually and placing aside. Stacks paper tubes ready for sewing, inspects them after sewing, counts them into bale lots and places aside those with defective stitching. Centers plastic handles or inspection tags on ends of bag tubes to be sewn onto bags.

May tend machine that presses prepasted seams and bottom folds to seal bags. May tend automatic machine that stitches glued binding tape to ends of tubes to seal paper bags. May be designated according to type of machine tended; for example, Bottoming-Machine Tender
Sleever

8593-278 PAPER-CUP-MACHINE TENDER(paper prod.) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that automatically forms flat-bottomed paper cups: Loads roll of paper on machine, using electric hoist. Threads ends of paper through rollers, forming guides and cutting dies. Fills glue reservoir to specified level. Presses button to start machine, and observes operation to detect malfunctioning of machine that automatically forms and glues paper into cups. Examines sample cups for defects. Places specified number of cups into boxes preparatory to packing.

8593-282 PARTITION-SLOTTER-MACHINE TENDER
(paper prod.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that cuts interlocking slots or notches in two strips of cardboard to form multicell partition (divider) for cardboard containers:

Reads work order to determine slotting specifications and quantity of dividers to be produced. Adjusts slotter head and knives to panel dimensions, using wrenches. Sets automatic counter to control number of parts produced in run. Loads blanks into machine hopper by hand. Starts machine and observes operation of feeding, slotting and cutoff mechanisms to detect any malfunctioning. Verifies dimensions, using ruler. Performs minor maintenance to machine, using hand tools.

8593-286 ROLLING-MACHINE TENDER(paper prod.) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that winds and cuts wallpaper into rolls of specified lengths:

Adjusts guides to accommodate wallpaper of various widths, using wrench. Threads wallpaper through machine, and presses button to start machine that automatically rolls and cuts paper. Observes wallpaper for tears and other defects. Lifts rolls from discharge end of machine and places specified number into boxes, or ties rolls into bundles.

8593-290 ROLL-SLICING-MACHINE TENDER(paper prod.) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends battery of machines that slice cross sections from rolls of carbon paper or inked plastic sheeting to make narrower rolls:

Places roll of paper or sheeting on arbor of machine, tightens screw on arbor to prevent unrolling during slicing and lifts ratchet into position to lock end of arbor. Presses button to start machine that rotates circular knives against rolls to cut off narrower rolls. Presses button to stop machine and removes sliced rolls from arbor. Examines edges of cut rolls for faults to determine if knives need sharpening. Carries rolls to workbench for completion by helper.

May sharpen circular knives by pressing buttons to move grinding wheel against rotating knives, and by holding emery paper against rotating knives for further sharpening.

8593-294 SEALING-MACHINE TENDER(paper prod.) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: L 4

Tends machine that applies sealing glue, such as latex, to envelope flaps, and dries them by passing envelopes under heat element:

Fills glue reservoir. Turns on drying lamps and loads automatic feed rack with envelopes. Observes machine in operation and examines envelopes to detect malfunctioning in feeding, gluing or drying process. Adjusts rollers to regulate glue flow, and turns rheostat to synchronize rate of envelope feed with flow of glue. Removes material jammed in rollers. Removes envelopes from end of conveyor, and places them into boxes.

8593-298 STAYER-MACHINE TENDER(paper prod.) DPT:685

GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that tapes or glues corners of scored box blanks to form containers:

Adjusts machine according to size of box to be formed, by bolting form to machine ram and adjusting walls of well, using hand tools. Inserts reel of tape on machine feedrack, and threads tape through feed and moisture rolls. Replenishes glue reservoir. Fastens containers by any of the following methods: 1. Presses button to start machine and loads scored box blanks into automatic feedrack. 2. Bends scored blank around box form with hands or knees and presses pedal to position and glue end-pieces on box. 3. Positions box over anvil, pressing sides of box to form corner. Depresses pedal to lower knife that cuts and applies tape to corners. Rotates box to tape all corners. Stacks formed boxes on pallets.

8593-302 BAG-MAKING-MACHINE-TENDER HELPER(paper prod.) DPT:687
GED: 2 SVP: 2 EC: 1 5 PA: M 4

Helps tend machine that automatically converts plain or wax paper, synthetic film, metallic foil or other materials to form bags:

Inserts shaft into core of parent roll and secures it with steel collars, using hand tools. Lifts and mounts roll on machine stands, using electric hoist. Splices new roll to end of previous roll with tape. Replenishes glue and ink reservoirs manually. Assists in making repairs and adjustments, using hand tools. See also definition for term title, 02-160 HELPER (any ind.).

8593-306 CORRUGATOR-OPERATOR HELPER(paper prod.)
DPT:687

GED: 2 SVP: 2 EC: I 5 PA: H 4

Helps operator to corrugate and face paperboard for containers, by performing any combination of the following duties:
Moves rolls to machine, using hand truck. Inserts spindle through core of roll and adjusts collars to center roll on spindle. Attaches electric hoist hooks to spindle, hoists roll onto machine feed rack, and turns wingnuts to fasten clamps over ends of spindle. Splices end of new roll to end of spent roll with tape. Mixes starch powder with water to make adhesive, according to formula, and fills glue reservoirs. See also definition for term title, 02-160 HELPER (any ind.).

8593-310 CARTON-FORMING-MACHINE FEEDER(paper prod.)
DPT:686

GED: 2 SVP: 1 EC: I PA: L 3 4

Feeds machine that shapes flat blanks of cardboard into finished cartons for packing machine:

Feeds stacks of flat carton blanks into mouth of carton forming machine manually. Removes blanks from discharge end of machine individually, straightens and nests them. Discards defective cartons.

8593-314 SLITTER-CREASER FEEDER(paper prod.)
DPT:686

GED: 2 SVP: 1 EC: I 5 PA: M 4

Feeds paperboard blanks or sheets into machine that scores, perforates, prints and slots them for forming into boxes:

Loads pre-cut blanks into automatic machine feeder, or positions stacks of paperboard sheets against guides on feed table and inserts each sheet into machine feed rollers. Fills ink reservoirs with ink of specified colour. Sets counter, prior to feeding machine, to control number of blanks to be processed. Removes scored blanks from discharge end of machine, examines for faults, and stacks on pallets. May assist in setting up machine. May adjust scoring, perforating and slotting discs or knives, feed guides and rollers, as directed, using hand tools.

8593-399 OTHER PAPER PRODUCT FABRICATING AND ASSEMBLING OCCUPATIONS

This group includes paper product fabricating and assembling workers, not elsewhere classified; for example, those who tend machines that make and coat paper cartridge shells for dynamite, shape box tops, cut and fold crepe paper, and mould wood pulp directly into products, such as egg cartons and food trays. Typical examples of occupational titles covered by this residual group definition are:

Bag Repairer(paper prod.)
Knotting-Machine Tender(paper prod.)
Shell-Machine Tender(paper prod.)

8595-PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION

This unit group includes occupations concerned with preparing surfaces for staining and painting; applying decorative and protective materials on wood, metal or similar surfaces of structures and equipment; dipping and coating; polishing and baking. Activities include: applying paint to surfaces, using brushes, rollers or hand-held spray equipment; staining furniture; operating and tending spraying machines, and performing related duties. Construction painting and decorating occupations are classified in Unit Group 8785, PAINTERS, PAPERHANGERS AND RELATED OCCUPATIONS.

Painters and Decorators, Hand
8595-110 through 8595-206

8595-110 FURNITURE FINISHER(furn.)
DPT:681

wood finisher.

GED: 4 SVP: 6 EC: I 5 7 PA: L 3 4 7

Finishes or refinishes new or repaired furniture to specified colour or finish, utilizing knowledge of wood properties, finishes, and furniture styling, performing any combination of the following duties:

Disassembles articles, masks areas adjacent to area being refinished and removes accessories such as knobs and hinges to prepare article for refinishing. Removes old finish and surfaces by abrading with steel wool or sandpaper, or by brushing solvent onto surface to soften finish, removing softened finish by scraping with knife or steel wool. Removes excess solvent by rubbing surface with cloth immersed in paint thinner, sal soda or other material. Applies plastic putty, wood putty or lacquer stick to surface, using spatula or knife, to fill nicks, depressions, holes and cracks. Smooths flat surfaces with sandpaper or using sanding machine. Selects finish ingredients and mixes them by hand or machine to obtain specified colour, or shade. Brushes or sprays successive coats of stains, varnish, shellac, lacquer, or paint on workpiece. Grains woods or paints wood trim using graining roller, comb, sponge or brush. Polishes and waxes finished surfaces.

May brush bleaching acid over surface to restore wood to natural colour, and removes excess acid by applying suitable neutralizer. May spread graining ink over metal portions of surfaces to simulate wood-grain finish. May be designated according to type of furniture finished or finish applied; for example,

Piano-and-Organ Refinisher
Powder Gilder
Television-Cabinet Finisher
Whitener

8595-114 PAINTER(motor vehicle)
DPT:661

GED: 4 SVP: 6 EC: I 7 PA: M 3 4 7

Repaints vehicles, such as automobiles, trailers, buses and trucks:

Removes old paint from vehicle or damaged or repaired portion of vehicle, using liquid paint remover and scraper. Covers bumpers, windows, and chrome trim with masking tape and paper, or removes chrome mouldings and trim prior to painting. Mixes paints to attain specified colour, colour which matches vehicle, or uses pre-mixed colours supplied by manufacturer. Primes base metal with type of primer that suits metal and finish paint. Cleans and smooths surface, using solvent, wet abrasive paper or steel wool prior to painting. Fills scratches and small dents with filler compound. Paints specified portion of vehicle, using spray gun or brush.

May spray undercoating material over bottom of vehicle to prevent corrosion.

8595-118 PAINTER, SHIPYARD(ship & boat bldg.)
DPT:661

GED: 3 SVP: 6 EC: B 6 7 PA: M 2 3 4 7

Prepares wood and metal surfaces for painting, and paints parts, equipment, interiors and exteriors of ships, and shipyard buildings:

Mixes solvents according to formula and immerses parts in solution or washes surfaces, to remove grease, rust, scale and dirt. Removes old paint, using blowtorch, sandblaster or paint remover. Smooths wooden and plaster surfaces, using sandpaper, scraper and sanding machines. Fills cracks and holes with patching plaster, putty or plastic wood. Washes and treats surfaces with oil, turpentine and other preparations. Brushes and rubs filler material into grained wood to prepare surfaces for painting. Mixes and matches colours of paint, varnish, stain, shellac and calcimine. Applies paint to surfaces, using brushes, spray guns and rollers. Sands surfaces between coats and polishes final coat to specified finish.

May cut glass and install window and door panes. May hang wallpaper. May cut stencils, and brush or spray lettering and decorations on surfaces.

8595-122 SPRAY PAINTER, SIGNS(misc. prod. fab., n.e.c.)
DPT:681

GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Lays out and paints letters, designs and background detail on plastic and neon signs, by one of the following methods:

Prepares signs for painting by washing surfaces, using lacquer, thinner, coal tar and cloth. 1. Sprays transparent rubber film over plastic sign surface, for later use in applying design and colour to sign, using spray gun. Places full size pattern on illuminated lay-out table, positions plastic sign on top of pattern, cuts design into rubber film,

using stencil, knife and ruler, to transfer design and letters from master pattern onto plastic sign. Positions plastic sign on hanging bar, using pulley chain blocks and angle iron, to achieve desired height and stability. Tears rubber film off portion of sign to be painted and sponges portion with water to remove static electricity from plastic. Sprays transparent paints over plastic sign, working from darker to lighter colours, and peels rubber film off successive portions of sign, allowing paint to dry between each coating. Sprays background of sign after darker colours have dried. 2. Sprays primer coat on metal background of neon sign to improve adhering and wearing properties of paints, using spray gun. Sets master pattern on carbon paper and traces sign design, using hand perforating wheel, to make pounce pattern. Tapes pounce pattern to metal background of neon sign and sprays black lacquer through holes made by perforating wheel to transfer design to sign surface. Mixes paint to match colour codes specified on master pattern. Paints letters and design onto neon sign background, working from lighter to darker colours, using enamel paints, brushes and masking tape.

8595-126 SPRAY PAINTER, FINISH, LARGE(any ind.) DPT:664
GED: 3 SVP: 5 EC: 1 7 PA: H 2 3 4 5 7

Prepares surfaces and applies protective or decorative coating, such as primer, paint, enamel or lacquer to ships, aircraft, automobiles, trailers, boilers, pumps, smoke stacks and large surfaces of machines and equipment to provide finished surface, using spray gun, performing any combination of the following duties:
Removes rust from metal surfaces, using acid, scraper, wire brush, emery cloth or steelwool. Cleans and smoothes work surface, using solvents, soap and water, air hose, sandpaper or sanding machine. Applies acid to certain metal surfaces to ensure that paint will adhere to surface. Fills cavities and dents with putty or patching compound to assure smooth finish. Applies masking tape over parts and areas that are not to be coated. Selects coating liquid, adds thinner and mixes solution, using paddle or mechanical mixer to attain required consistency and colour, or selects ready to use paint. Pours coating liquid into spray container and connects gun to air-hose, using wrenches. Erects and moves ladder or scaffold to worksite. Climbs ladders or scaffold and climbs onto or moves around workpieces to spray larger items. Turns sprayer valves and nozzle to regulate width and pressure of spray. Pulls trigger to start sprayer and directs spray onto work surface. Coats areas inaccessible to hand sprayer, such as fuel lines and electric controls, using brush. Paints insignia and identifying letters and numbers on surfaces, using stencils and spray gun. Cleans spraying equipment and brushes with solvent. Directs workers in performing duties such as, moving items to work area, and transferring finished pieces to stockroom.
May be designated according to item sprayed; for example,
Painter, Aircraft(air space-craft)
Painter, Boiler(metal fab., n.e.c.)
Painter, Locomotive(rail. rolling stock)

8595-130 CAR PAINTER AND LETTERER(motor vehicle; rail. rolling stock) DPT:684
GED: 3 SVP: 5 EC: 1 6 7 PA: M 2 4 7

Paints and letters transport equipment, such as buses, locomotives and freight cars:
Lays out areas to be painted, using tape measure, pencil and straightedge, and masks area not to be painted with tape and paper sheets. Applies primers and finish paint to surface of vehicle, using handbrush or spray gun. Cuts stencils by hand or machine, tapes them onto vehicle and applies paint over them, using handbrush or spray gun. Applies decalcomania letters, numerals and motifs to interior and exterior surfaces of vehicle. Paints contrasting line around letters, numerals and motifs to enhance appearance.
May remove old paint, using blowtorch or paint remover and hand scraper. May mix and match paints according to colour charts. May be designated according to type of vehicle lettered; for example,
Railway-Car Letterer(rail. rolling stock)

8595-134 DECORATOR(furn.) DPT:684
GED: 3 SVP: 5 EC: 1 7 PA: M 4 7

Applies decorative designs to furniture performing any combination of the following duties:
Mixes paint or gilt in cans and matches colours according to specifications or uses prepared paints. Draws threadline marks on furniture as guides for striping, using stylus. Prepares and cuts paper

stencils, using stylus and scissors. Marks parts not being decorated with tape and cardboard. Applies paint or gilt over stencil, using spray gun or handbrush. Applies shellac, paint or gilt onto surface of furniture article to form decorative designs or stripes, using brush. Fills production card, recording number of articles completed and style number.
May apply designs to articles by lowering silk screen over workpiece and moving squeegee dipped in paint across silk screen. May be designated according to type of decoration applied; for example,
Striper, Hand

8595-138 ENAMELLER, HAND(jewellery & precious metal prod.) DPT:684
GED: 3 SVP: 5 EC: 1 PA: L 4 7

Applies decorative enamel to jewellery articles, such as pins, earrings, insignia and medals, using hand tools, and bakes articles in oven:
Cleans jewellery in baths of acid and water, and scrubs surfaces with brush. Mixes ground colored enamel and distilled water according to specifications. Places articles in holding device and applies liquid or powdered enamel of various colors to designated areas of jewellery to form specified design, using pick, spatula or spray gun. Removes enamel that has spread beyond design, using brush. Sets oven controls to specified temperature. Places metal tray or rack containing jewellery into oven to fuse enamel to jewellery. Determines baking time according to size of articles and composition of enamel. Observes colour of enamel to determine temperature and avoid overheating. Removes metal tray or rack from oven, using tongs and sets enamelled parts in cooling rack. Immerses jewellery in baths of acid and water to remove oxide scale. Smooths enamelled surfaces of jewellery articles, using abrasive stone or emery file. Reheats enamelled jewellery in oven to produce luster.
May use buffing machine equipped with emery wheel to remove excess enamel. May be designated according to specific task performed; for example,
Enamel Applier
Enamel Buffer
Enamel Burner

8595-142 SPRAY PAINTER, FINISH, SMALL(any ind.) DPT:664
GED: 3 SVP: 4 EC: 1 7 PA: M 4 5 7

Prepares surfaces and applies protective or decorative coating, such as paint, varnish, silver or copper solution, enamel or lacquer to machines, manufactured products or other items to provide finished surface, using spray gun, performing any combination of the following duties:
Cleans grease and dirt from product, using cloth or materials such as, lacquer thinner, turpentine, soap and distilled water. Removes rust from metal surfaces, using wire brush or steel wool. Applies masking tape over parts and areas that are not to be coated. Fills cavities and dents with putty or metal filler and sands surfaces, using hand or powered sander to attain smooth surface. Selects and mixes coating liquid to produce desired colour according to specifications, using paddle or mechanical mixer, or uses pre-mixed coating. Pours coating liquid into spray container and connects gun to airhose, using wrenches. Places items on racks, or presses foot pedal to activate rotating air hoist to raise items into position for spraying. Turns sprayer valves and nozzle to regulate width and pressure of spray. Pulls trigger to admit solution into spray gun. Directs spray through silk screen or directly onto surface of workpiece to apply finish coating. Observes sprayed area to detect spots, streaks and residue colouring. Coats areas inaccessible to hand sprayer, using brush. Places coated items on rack for drying, onto drying oven conveyor or pushes wheeled rack of components into oven. Adjusts electric oven controls to maintain specified temperature. Cleans spraying equipment and brushes with solvent. Assigns painting duties to spray and brush painters and examines finished product for conformance to specifications.
May be designated according to article or surface sprayed; for example,
Cabinet Sprayer(electronic equip.)
Lamp-Base Sprayer(misc. prod. fab., n.e.c.)
Luggage Sprayer(leather goods)
Metal-Spray Painter(metal fab., n.e.c.)
Mirror Painter(glass)

8595-146 FINISH-TOUCH-UP MAN(furn.) DPT:684
 finish patcher; touch-up painter, hand.
 GED: 3 SVP: 4 EC: I 7 PA: L 3 4 7

Repairs defects in finish of furniture and cabinets of home appliances, such as air conditioners, television sets and record players, performing any combination of the following duties:

Checks inspectors markings or examines workpiece for defects, such as holes, cracks or scratches. Wipes, scrapes, sands or applies cleaning solution to surface to prepare surface for retouching or refinishing. Fills holes and cracks in wood with shellac or wax, using heated blade to melt and spread filling material. Applies stain, varnish or other protective coating to match finish, using brush or spray gun. Smooths repaired surface with sandpaper, pumice stone, or steel wool. Polishes wood with oil or wax to match surrounding finish.

8595-150 STAINER(furn.) DPT:684
 GED: 3 SVP: 3 EC: I 7 PA: M 4 7

Stains parts of furniture, mirror frames or picture frames, using brush, pad or spray gun:

Reads work order for finishing specifications. Pulls article along roller conveyor into staining station and examines article for damage, such as scuff marks and scratches. Masks areas not to be sprayed. Measures and mixes water or alcohol and pigment to prepare stain solution. Sprays, brushes or rubs stain evenly on designated areas. Rubs or wipes stained surface with cloth to remove drips or excess stain. Pushes stained article onto powered roller conveyor to remove from staining station. Cleans spray tank, nozzles, and brushes with solvent. Applies varnish, using spray gun. Smooths and polishes successive coats of finish, using powdered pumice, pumice stone and sandpaper. May use a specific method of applying stain and be designated accordingly; for example,
 Brush Stainer
 Pad Stainer
 Spray Stainer

8595-154 STAINER, SMOKING-PIPE(misc. prod. fab., n.e.c.) DPT:684
 GED: 2 SVP: 3 EC: I 6 7 PA: L 4 7

Applies stains and lacquers to shanks and bowls of briar pipes: Measures specified quantity of stain, varnish and lacquers, using scales and graduated cylinders, and blends in mixing unit. Heats stain to specified temperature range. Sets pipe in rack, stains exterior, using brush, and allows pipe to dry. Places dried pipes into tray, according to grade and style. Varnishes or lacquers stained pipes, using brush. May recoat pipes according to type of finish required and polish quality pipes to produce a deeper tone finish.

8595-158 BANDER, HAND(glass) DPT:684
 GED: 2 SVP: 3 EC: I PA: L 4 7

Paints bands or lines on exterior and interior of glassware, such as tumblers, vases, and bowls: Marks area on glassware to be banded or lined, using ruler. Centers glassware on wheel or rotating spindles. Holds brush to ware while resting arm on support to steady hand to paint lines or bands. Examines painted lines and bands for straightness, thickness and width. Places painted glassware on moving conveyor or on trays. May work from a sample.

8595-162 FRAME-MOULDING FINISHER(misc. prod. fab., n.e.c.) DPT:684
 frame toner.
 GED: 2 SVP: 3 EC: I 7 PA: L 4 7

Imparts finish to mirror or picture frame mouldings performing any combination of the following duties:

Compares colour of pre-mixed coating with sample and adds ingredients to mixture to produce match with sample. Lays strip of moulding face upon table. Dips cloth pad, steel wool or sponge in paint, stain, filler or lacquer and rubs pad over surface to apply or remove coating. Applies coating to portions of moulding, using brush or roller. May smooth surface of moulding prior to painting, using sandpaper and steel wool. May fasten linen to moulding, using glue and pressurized roller to form mat (bordering frame).

8595-166 GILDER, METAL-LEAF(misc. prod. fab., n.e.c.) DPT:684
 GED: 2 SVP: 3 EC: I PA: L 4 7

Covers surface of mirror or picture-frame moulding with silver or gold leaf:

Brushes sizing (thin glue) onto surface. Blows leaf from supply book onto palette. Picks up leaf from palette with T-shaped felt-edged tool and positions leaf on surface. Smooths leaf over surface with edge of tool and rubs off excess leaf, using pad of cotton waste. Polishes gilded surface to high lustre by rubbing it with cotton pad or gloved hand. Sprays protective coat of lacquer over gilded surface. May paint back of gilded frame, using brush and bronze paint. May shellac surface to be gilded, to impart smooth, shiny finish.

8595-170 PAINTER, AIRBRUSH(any ind.) DPT:684
 GED: 2 SVP: 3 EC: I 7 PA: L 4 7

Coats, decorates, glazes, retouches or tints articles; such as, glassware, toys, pottery, artificial flowers, greeting cards and household appliances, using airbrush:

Stirs or shakes coating liquid and thinner and mixes to specified consistency. Pours liquid into airbrush container, couples spray gun to air hose, and starts compressor or opens valve on compressed air line. Turns adjusting sleeve on nozzle of spray gun to regulate spray pattern to size of workpiece or area to be sprayed. Presses button on airbrush to spray coating over workpiece, or to spray specified designs and decorations on workpiece, spraying freehand, or using stencils, masks, screens and tape. Examines articles for runs. Cleans gun and hose with solvent.

May apply decals and stencils to various surfaces. May paint decorative indentations on articles, using brush or airbrush and be designated,
 Inlay Painter(any ind.)

8595-174 TOUCH-UP PAINTER(motor vehicle; rail. rolling stock) DPT:684
 GED: 2 SVP: 3 EC: I 7 PA: M 2 3 4 7

Applies coating to cover up scratches, chips or repairs in painted finish of automobiles or railroad cars, using brush or spray gun performing any combination of the following duties:

Examines vehicle for defects or inspector's markings. Sands defective area, using power sander. Applies thin even coat of finish material, such as paint or lacquer to sanded area, using spray gun. Sprays solvent over finish coats to blend in spots and eliminate halo around repair. Paints chipped spots, using brush. Compares colour of paint supply with colour chart and workpiece and remixes it to attain matching colour. Cleans splattered paint from wheels and other parts of vehicles, using solvent and rag. Applies caulking compound to seal crevices in window and door frames, using hand-caulking gun.

8595-178 PAINTER HELPER, SHIPYARD(ship & boat bldg.) DPT:687
 GED: 2 SVP: 3 EC: B 7 PA: M 2 3 4 6

Helps painter to prepare and paint wooden and metal surfaces of ships and shipyard buildings by performing any combination of the following duties:

Removes barnacles, other marine growth and rust from hull of ship undergoing repairs and prepares surfaces of hull, storage tanks, holds and bilges, using pneumatic chipper, hand scraper, sander, wire brush, steam cleaning equipment and paint remover. Applies preservative, rust inhibitor and primer coatings to surfaces, using paint brush. Cleans spraying equipment, using solvent and hand tools. See also definition for term title, 02-160 HELPER (any ind.).

8595-182 SPRAY PAINTER, ROUGH(any ind.) DPT:664
 industrial spray-painter.
 GED: 2 SVP: 2 EC: I 7 PA: M 3 4 5

Prepares surfaces and sprays protective, sealing or adhesive solution, such as paint or glue mixtures, oxides or chromates onto metal or wood surfaces where finished appearance is not important, using spray gun and performing any combination of the following duties:
 Removes rust from metal surfaces, using acid, wire brush or steel wool. Cleans grease and dirt from product, using materials, such as lacquer thinner, turpentine, soap and water. Selects and mixes coating to produce desired liquid suspension, using paddle or mechanical

mixer. Pours coating liquid into spray container and connects gun to air hose, using wrenches. Lowers electric powered spinner to skid level to roll tubular items over spinner and starts spinner to rotate tubular items during spraying. Turns sprayer valves and nozzle to regulate width and pressure of spray and obtain maximum coverage. Squeezes trigger of spray gun and directs spray onto work surface. Stoops and crouches to paint difficult to reach areas or lower parts of workpiece. Cleans and maintains spraying equipment in proper condition and makes minor repairs and adjustments. Reports major repairs to supervisor. Marks identifying information on surface of coated area, using stencil and spray gun. Directs workers engaged in performing duties such as, moving material to work area and transferring finished pieces to stockroom. May be designated according to surface sprayed or coating applied; for example, End-Sealer Sprayer, Wooden Boards(veneer & plywood) Pipe-Spray Painter(iron & steel)

8595-186 SPRAY PAINTER, ROUGH, BENCHWORK(any ind.) **DPT:664**
GED: 2 SVP: 2 EC: 1 7 PA: M 4 7

Prepares surfaces and applies conductive, protective adhesive or stiffening materials, such as paint, varnish, shellac, rubber cement, or lacquer to surface of television tubes, sporting goods, metal forming plates and home appliances or shoes where finished appearance is not required: Cleans surface of area to be sprayed, using materials such as, lacquer thinner, turpentine, soap and water. Fills cavities and dents with putty to attain smooth surface. Applies masking tape or shield over parts and area that are not to be coated. Selects and mixes coating liquid to produce desired colour, using paddle or mechanical mixer. Pours coating liquid into spray container and connects gun to air hose, using wrenches. Turns sprayer valves and nozzle to regulate width and pressure of spray. Squeezes spray gun trigger and directs spray onto surface of workpiece on assembly line, moving conveyor, rotary table or in spray booth. Coats areas inaccessible to hand sprayer, using brush. Places workpiece under heat lamps, on drying rack or on conveyor that carries them through drying station. Cleans spraying equipment and brushes with solvent. Visually examines surface for spraying defects. Records daily production. Directs workers engaged in performing duties such as, moving materials to work area and transferring finished pieces to stockroom. May be designated according to article sprayed; for example, Forming-Plate Sprayer(rubber) Sprayer, Boots and Shoes(shoes) Tube Dagger(electronic equip.)

8595-190 DECAL APPLIERS(cement, stone & clay) **DPT:684**
GED: 2 SVP: 2 EC: 1 PA: L 4

Applies decal designs to surfaces of pottery or dinnerware by moisture process: Cleans surface to be covered, using moist cloth. Submerges decals in water to moisten adhesive and backing paper. Positions moist decal on surface visually or using template and smooths out air bubbles with fingers or roller. Slides backing paper from moistened decal and wipes off excess adhesive with damp cloth. May brush varnish over decal.

8595-194 PAINTER, MOTOR AND GENERATOR SUBASSEMBLIES(electric, equip.) **DPT:684**
GED: 2 SVP: 2 EC: 1 7 PA: M 4

Cleans and prepares surfaces of electric motor and generator subassemblies and applies paint or insulating coating: Brushes solvent onto parts or dips parts into caustic solutions to loosen paint, grease, dirt and other foreign matter and rinses parts with hot water. Removes loosened paint, using scraper, wire brush, or portable buffer. Brushes grease and masking compound or winds masking tape on areas such as, shafts and leads, inserts cork-plugs into holes, and tightens screws, to keep insulating coating or paint from specified areas. Coats parts with paint or insulating liquid, such as epoxy, using spray gun, or by dipping into tank. May mount identifying data plate on motor, using electric drill and riveter. May stamp date plate with specified identifying markings, using die stamps and hammer.

8595-198 UNDERCOATER(motor vehicle) **DPT:684**
GED: 2 SVP: 2 EC: 1 7 PA: H 3 4

Sprays rust-proofing compound on underbodies and other parts of motor vehicles, using high pressure spray gun: Cleans rust, scale, grease and dirt from surface to be treated, using wire brush, steam hose and solvents. Sprays compound onto chassis and underbody of vehicle, splash pans, grill extensions, headlight buckets, trunk and hood interiors, using high pressure air spraying equipment. Masks painted or chromed surfaces to prevent exposure to coating spray, using tape. May drill holes in door and other panels to allow entrance of spraying tool, using electric hand drill. May seal holes by inserting plastic plugs, using hand pressure. May remove surplus compound from glass and painted and chromed surfaces, using solvent and cloths.

8595-202 CRESTER(sport. & toy) **DPT:687**
GED: 2 SVP: 2 EC: 1 PA: L 4

Decorates (crest) archery arrow shaft, to enhance appearance and facilitate identification of arrow by the archer: Inserts shafts of arrows in cresting device and depresses pedal to bring arrow into rotating position for application of decoration. Applies bands of colours to rotating shaft according to work order, using paint and brush or decals. Depresses foot pedal to repeat operation. May mix paints.

8595-206 PAINTER, BRUSH(any ind.) **DPT:687**
GED: 2 SVP: 2 EC: 1 5 7 PA: M 3 4 7

Applies paint, lacquer, rustproofing or other coating material to metal or wooden fabricated items, using brush or roller: Cleans surface of workpiece, using blow torch, portable sander, hand scraper, wire brush or sandpaper. Prepares surfaces of articles to be painted by applying protective oils, fillers, putties and patching compounds. Covers sections not to be painted with masking tape. Pours and stirs thinners into paints to obtain proper consistency. Paints articles, using brush or roller. Paints stock or part numbers onto workpiece, freehand, or by stencil. Transfers items to and from work area, using hoist or handtruck. Cleans brushes and rollers with solvents. Cleans work area, using brushes or brooms. May paint shop equipment such as work benches, stock racks or machines to improve their appearance. May position ladders and scaffolding when painting large items. May be designated according to article painted or coating applied and be designated accordingly; for example, Car Varnisher(rail, rolling stock) Lacquerer(mach. weld. & forg.) Painter, Drum(mech. mfg., n.e.c.) Pipe Coater(metal fab., n.e.c.)

Painters and Decorators, Machine 8595-230 through 8595-286

8595-230 SPRAY-MACHINE SET-UP MAN, TINWARE(metal stamp., press. & coat.) **DPT:380**
GED: 3 SVP: 6 EC: 1 5 6 7 PA: M 4

Sets up automatic machines that spray protective coating of lacquer inside tin cans: Adjusts can-feed mechanism, guides, and intake and discharge gates for size of can, using hand tools. Aligns can-holding devices and conveyors, tightens adjusting bolts and runs sample cans through machine to test operation. Adjusts travel of spray-assembly mechanism, using hand tools. Examines lacquer supply lines for leakage, and checks pressure and temperature gauges to ensure correct functioning of lacquer-pumping and heating systems. Starts machine and observes progress of cans through machine, clears stoppages, checks cans for mechanical damage and makes adjustments. Visually examines coating for thickness and defects, and adjusts lacquer supply or spray nozzle mechanism as required. Oils and greases machine. Cleans filters and nozzles, using air hose and solvents. Makes minor mechanical repairs, using hand tools. May monitor operation of drying ovens used in conjunction with spraying machines.

8595-234 SILVERMAN(glass) DPT:382
silver-line operator.
 GED: 3 SVP: 5 EC: I 7 PA: M 4

Operates silvering range equipment that washes, sensitizes, silvers, paints and dries flat glass to produce mirrors:

Weighs or measures, and mixes ingredients, according to formula, to produce tin chloride, silver, copper and paint solutions, or obtains pre-mixed solutions. Pours ingredients or pre-mixed solutions into storage tank mixer of feeding units. Presses switch to start storage tank mixer that agitates mixture continuously. Presses button to start line conveyor, backing paint sprayers and drying ovens. Turns valves to start flow of wash water and coating solutions into spray heads. Observes spray to detect clogged nozzles and uneven or insufficient coating. Reads pressure gauges and turns valves to adjust solution flow and air pressure. Regulates oven temperature as specified. Removes spray nozzles and pipelines, using hand tools and cleans, using solvents. Performs minor repairs to silvering range equipment. Records batches mixed and chemicals used.

May prepare coating solutions in mixing vats, using power mixer or paddle, and transfer them to storage tanks. May measure and record thickness of silver coating, using gauge. May regenerate water softener to obtain required degree of softness of water for solutions.

8595-238 SPRAYER OPERATOR, AUTOMATIC(any ind.) DPT:682
paint-sprayer operator.
 GED: 3 SVP: 4 EC: I 7 PA: M 4 7

Operates and controls paint-spraying and drying units along conveyor line to apply decorative or protective coating on leather, metal, asbestos, plastic, ceramic and wooden products:

Places workpieces on conveyor. Turns valve to regulate water-shield spray. Starts pumps to mix coating materials, such as enamel, oil, lacquer, paint, rust proofing, or varnish to fill tanks and to control viscosity of material. Screws specified nozzles into spray guns and positions nozzles to spray workpiece. Lights ovens, turns knobs and observes gauges on control panel to set specified temperature and air circulation in drying oven, to synchronize conveyor speed with action of spray guns and ovens, and to regulate atomizing pressure in spray guns. Determines flow, viscosity, and quality of coating, visually, or using viscometer or pycnometer. Cleans machine and equipment, using solvent and cloths.

May switch on electric eye that activates spray nozzle.

8595-242 COATING-MACHINE OPERATOR, TINPLATE(metal stamp., press. & coat.) DPT:682
coater operator.
 GED: 3 SVP: 4 EC: I 5 6 7 PA: M 4 7

Operates automatic coating-machine and drying oven to coat tinplate with protective and decorative paint, enamel or lacquer:

Marks specified areas to be coated on sample sheet of tinplate with scribe. Sets up rollers, guides and gauges to specifications, using wrenches and ruler. Sets conveyor speed and oven temperature controls. Loads feeding mechanism with tinplate sheets. Starts machine, runs trial samples and makes adjustments to regulate feeding, coating and drying operations. Clears blockages and corrects machine malfunctions during run. Tests and thins coating material to specified viscosity and replenishes reservoirs. Examines coating for quality and checks thickness. Cleans and changes rollers on automatic coater and lubricates running parts of machines.

May prepare production records. May operate automatic tinplate stacking machine in conjunction with coater machine and drying oven.

8595-246 PAINTER, ELECTROSTATIC(any ind.) DPT:682
 GED: 3 SVP: 3 EC: I 6 7 PA: L 4 7

Operates electrostatic spray painting units to spray negatively charged paint particles on to positively charged work pieces:

Obtains paint supply in colour specified according to order. Fills tanks with paint as required. Moves switches and dials to start current flow and activate conveyor and paint spraying equipment. Observes gauges and turns valves to set pressure and control paint flow to each spray station. Observes panel lights to monitor each spraying unit. Adjusts thermostat to maintain specified temperature in drier unit. Inspects painted units for runs, sags, colour match and unpainted areas. Readjusts pressure valves to control direction and pattern of spray and correct flaws in painting. Drains and cleans cones, spray heads, and

hoses, using solvents and brushes. Hand sprays parts to cover unpainted areas, such as deep seams or to apply rust preventative.

May clean ceiling and walls of booth, conveyor belts, hooks and grids using solvents, brushes and rags. May mix paint according to specification or shade desired, using colour chips for shading and tone, and viscometer to regulate consistency according to changes in atmospheric conditions.

8595-250 SPRAY-MACHINE TENDER(any ind.) DPT:685
painting-machine tender.
 GED: 3 SVP: 3 EC: I 7 PA: M 4 7

Tends machine equipped with compressed-air-spray nozzles that coat products or materials with oil, dye, lacquer, paint, shellac or preservatives:

Pours pre-mixed coating material into reservoir of spraying machine and couples hose to spray nozzles. Loads workpiece onto feed conveyor or transfer table. Starts pump to move coating material to spray nozzles and turns valves or moves sleeves on nozzles to attain specified spraying pressure. Turns thumbscrew or positions spray head to direct nozzles to workpiece position and to produce an even coating. Starts conveyor or feed table that moves workpiece under spray. Examines coating to ensure conformity to specifications. Cleans coating equipment, using solvent, steam and cloths.

May start and regulate temperature of drying equipment, such as, ovens, heating cabinets and fans. May tend automatic spraying equipment in enclosed spray booth. May tend machine that coats finished hardboard panels with talc to prevent sticking during subsequent stacking. May be designated according to product or material coated; for example,

Glass Container Sprayer(glass)

Seasoning Applier, Leather(leather tan. & fur dress.)

Sign-Panel Primer(misc. prod. fab., n.e.c.)

Spray-Coating Machine Tender, Hardboard(pulp & paper; min. wool & asbestos)

8595-254 PAINTER, TUMBLING BARREL(any ind.) DPT:685
 GED: 2 SVP: 3 EC: I 7 PA: M 4 7

Tends tumbling-barrel painting machine to coat variety of articles with material, such as enamel, varnish or lacquer:

Places articles into tumbling barrel. Mixes coating and thinner as specified and pours over articles in barrel. Starts barrel rotating to coat articles while heated air is blown through barrel to dry them. Stops barrel, examines coated articles for uniformity, adds more coating as required, and restarts barrel. Unloads barrel, separating any articles stuck together.

May transport articles from stock room to machine, using hand truck. May tend electric oven to dry coated articles.

8595-258 PAINTING-LINE TENDER, ELECTROSTATIC(any ind.) DPT:685
 GED: 2 SVP: 3 EC: I 5 7 PA: M 4

Tends equipment that cleans, dips and electrostatically sprays a variety of articles, such as toy parts:

Mixes paint and thinner of specified colour and viscosity, using paint mixing unit, and pours solution into dipping tanks or containers of electrostatic spraying unit. Adjusts controls of cleaning solution tanks for specified temperature, conveyor controls for rate of movement, and sprayer controls for rate of spray and voltage as indicated by dials. Observes conveyor line until run is finished and changes paint colour to meet requirements.

8595-262 WIRE-COATING-MACHINE TENDER(wire prod.) DPT:685
impregnating-machine tender.
 GED: 2 SVP: 3 EC: I PA: M 4

Tends machine that coats continuous rolls of wire or wire screen with enamel or paint:

Places roll of material onto feed spindle of machine, manually or using hoist. Threads end of material through feed and guide rollers into dipping vat, through drying oven or chamber and attaches it to rewind spindle. Fills vats with paint or enamel coating solution. Sews or butt welds ends of material to repair breaks and to form continuous rolls. Observes oven-temperature gauge, foot-speed indicator and

footage counter to detect machine malfunction and adjusts machine controls when necessary.

8595-266 BANDING-MACHINE TENDER, GLASSWARE(cement, stone & clay) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that applies gold or platinum band onto rim or surface of pottery ware:

Selects chuck to hold type of ware to be banded and attaches chuck to machine, using hand tools. Adjusts applicator rollers and arm attachments according to width and location of band to be applied. Pours premixed gold or platinum solution into roller fonts. Inserts article in chuck and depresses pedal to apply band. Removes item and places it on rack to dry.

8595-270 COATING-MACHINE TENDER, PENCIL(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends one or more machines that apply lacquer to pencils:

Pours coating fluid into reservoir of machine. Places pencils in hopper of machine. Starts machine that presses pencils through gaskets in sides of reservoir to coat them with quick drying lacquer and drops them automatically on conveyor that carries them into container. Removes coated pencils from container and examines them for evenness of coating.

May tend two or more machines that apply successive coats of lacquer to pencils.

8595-274 COATING-MACHINE TENDER, TIN CANS(metal stamp., press. & coat.) DPT:685
spray machine operator.
GED: 2 SVP: 2 EC: 1 6 7 PA: M 4

Tends battery of automatic spray machines which apply protective coating of lacquer to inside of tin cans:

Adjusts spray nozzle to apply lacquer to inside of revolving cans. Starts machine and observes operation as cans are fed by conveyor onto holding turret for spraying. Removes cans from discharge line and visually inspects coating to ensure conformity to specifications. Removes jammed or defective cans by hand or using pole. Cleans machine parts, using solvents and brush.

May mix lacquer according to formula and fill machine reservoirs.

8595-278 DIPPER(any ind.) DPT:685
dipping-tank tender.
GED: 2 SVP: 2 EC: 1 7 PA: M 4

Dips articles into liquids; such as, paint, lacquer, latex, stain wax or asphalt, by any of the following methods:

1. Fills dipping tank with specified coating mixture and measures consistency with hydrometer, adding thinner to control density or moves controls to maintain temperature, flow and composition of liquid in dipping tank. 2. Loads feed conveyor or transfer rack, that automatically dips articles. Loads wire basket or rack and lifts and dips basket or rack, using hand or powered hoist. 3. Dips articles in liquid, using hoist. Hangs coated articles from overhead conveyor or positions articles on rack to drain excess coating. Removes articles from draining conveyor or rack and places on drying stands.

May test quality of liquid, using chemically treated paper and colour charts, and viscometer and add further coating solution to tank according to test results. May lift and dip baskets of articles in degreasing tank, to clean articles before dipping, using hoist. May tend oven that bakes and dries dipped components. May be designated according to coating applied or article dipped or function performed; for example,

Asphalt Coater(asphalt roof.)
Broom-Handle Dipper(woodworking)
Coil-Spring Dipper(metal fab., n.e.c.)
Dipper-Baker
Enamel Dipper
Varnish Dipper

8595-282 ENAMELLING-MACHINE TENDER(jewellery & precious metal prod.) DPT:685
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends equipment that coats jewellery parts with powdered enamel: Places jewellery on racks or rods or in wire trays. Positions container of parts in machine that sprays jewellery with agar solution so that powdered enamel will adhere to metal. Fills hopper of machine with specified shade of powdered enamel. Places container of parts on conveyor after agar solution is partially dried and starts vibrating machine that shakes powder onto parts as they pass under opening. Sets controls to heat drying oven to specified temperature. Places enamel-coated parts in oven to dry preparatory to firing them at high temperature.

8595-283 LINING-MACHINE TENDER(metal stamp., press. & coat.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: S 4 7

Tends machine that sprays rubber base sealing compound onto edges of tin can ends:

Places stack of tin can ends into feed hopper, and starts machine. Observes operation to detect jamming or improper functioning of equipment, removes jammed ends and makes minor adjustments. Removes ends from discharge end of machine, visually examines ends and discards defective ones. Stacks ends in containers and stamps identification data on containers.

May tend machine equipped with oven dryer or infra-red-baking unit when using water base sealing compound.

8595-286 TIP-BANDING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
tipper.
GED: 2 SVP: 2 EC: 1 PA: L 4

Tends machine that applies decorative or identifying band of paint to metal tips of pencils:

Dumps tips into machine hopper, from containers, and pours paint into reservoir of machine, from cans. Presses button to start machine that feeds tips against paint roller. Observes operation of machine to detect malfunctions. Turns valve to regulate stream of air, that dries painted tip and blows tip from conveyor into tray. Places tray in storage rack. Inspects tips randomly, and removes defective ones.

Other Painters and Decorators and Related Occupations

8595-306 through 8595-399

8595-306 RUBBER(misc. prod. fab., n.e.c.) DPT:684
GED: 3 SVP: 4 EC: 1 7 PA: M 4 7

Finishes wooden furniture and other wooden articles, such as picture frames according to type of finish desired, performing any combination of the following duties:

Fills and seals cracks with size of wood putty. Repairs minor imperfections in finishing, using knife, scraper or wood chisel. Sands article to impart smooth surface, using fine sandpaper or portable sanding machine. Applies oil, wax, or varsol to article, using brush or cloth. Stains wooden articles and rubs to produce highlights. Spreads powdered or paste pumice stone or other buffing compound on surface of article and rubs surface, using portable or bench polishing machine, cloth or steel wool to impart lustre. Polishes surfaces of picture frames, using agate type hand tool. Wipes residue from surface, using solvent soaked cloth to produce final appearance. Feels surfaces to verify smoothness of finish. Paints or shellacs wooden articles.

May be designated according to type of finish; for example,
Burnisher, Picture Frames
French Polisher, Hand

8595-310 MANNEQUIN FINISHER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 7 PA: L 4 7

Finishes papier mâché and plastic mannequins parts, by smoothing, patching and painting prior to assembly:

Washes wax off mannequin segment using solvent. Removes irregularities from seams using rasp, and smooths surfaces with sandpaper or power sander. Fills holes with plaster or patching compound. Builds

up small areas, such as eyelids and earlobes malformed in moulding. Glues mounting block with adjustable sleeve into wrist opening of hand. Buffs wrist area to size determined by mounting block, using buffing wheel. Rubs body of mannequin with fine sandpaper to obtain smooth finish and coats it with flesh- coloured lacquer, using spray gun.

May be designated according to function performed; for example, Checker and Undercoater Painter, Mannequin Sander and Buffer

8595-314 PAINTER HELPER(motor vehicle) DPT:684
GED: 2 SVP: 3 EC: I 7 PA: M 2 3 4 7

Helps painter in repainting vehicles, such as automobiles, trailers, buses, and trucks by performing the following duties:
Sands rough spots on vehicle, using wet-abrasive paper or power sander. Applies paper and masking tape to protect unpainted surfaces, such as bumpers, windows and chrome trim. Sands intermediate coats of paint, using wet-abrasive paper to ensure adherence of subsequent coat. Polishes final coat of paint, using polishing compound and cloth. See definition for term title, 01-160 HELPER (any ind.).
May remove old paint, using liquid paint remover, torch and scraper. May remove rust and dirt from surface, using sandpaper, wire brush, steam cleaner or acid. May brush or spray-paint areas such as wheels and underside of fenders.

8595-318 OVEN TENDER(furn.; metal fab., n.e.c.; sport. & toy) DPT:685
paint baker.
GED: 2 SVP: 2 EC: I 3 PA: M 4

Tends oven that bakes freshly painted parts of metal items, such as household appliances, furniture and carriages to harden finish:
Sets oven controls to prescribed temperature. Places workpieces on conveyor rack or hangs workpieces on hooks suspended from overhead- chain conveyor. Opens and closes oven doors, flipping switch. Turns hand wheel to push or pull conveyor rack into and out of oven or starts overhead conveyor and regulates speed of conveyor through oven in accordance with temperature of oven and size of pieces.
May place baked items on storage racks. May set timer to control baking time according to quantity and gauge of metal items. May be designated according to type of oven tended, for example, Batch-Feed-Oven Tender(sport. & toy)
Continuous-Feed-Oven Tender(metal fab., n.e.c.)

8595-322 SPRAY-PAINTER HELPER(any ind.) DPT:687
GED: 2 SVP: 2 EC: I 7 PA: M 3 4

Helps spray painter to coat surfaces of materials or products, by performing any of the following duties:
Moves materials to work area, using hand or motorized truck or dolly. Fills containers with prescribed quantities of paint and thinner. Applies masking to articles. Installs specified nozzles in spray guns. Replaces screens and filters. Mixes body fillers and fills seams and dents. Cleans and prepares surface of articles to be painted, using solvent, sandpaper, wire brush and portable electric sander. Erects ladders or scaffolds to facilitate painting large items. Cleans spraying and drying chamber, sediment collecting tanks, conveyor, tanks, hoses and nozzles, using solvent, brushes and cloths. Transfers finished pieces to stockroom or shipping areas. See also definition for term title, 02-160 HELPER (any ind.).
May count, weigh and record quantity and type of articles sprayed. May print company name on article, using hand stencil and roller. May inspect, mark and segregate defective pieces.

8595-326 CAR SCRUBBER(rail. rolling stock) DPT:687
coach cleaner.
GED: 2 SVP: 2 EC: I PA: M 2 3 4

Cleans and strips railroad cars preparatory to re-painting or re-finishing:
Strips car of articles, such as sign frames, signal cords, curtains, seat cushions and window frames, using screwdriver, hammer and chisel. Sweeps or blows dirt from car, using broom or air-hose. Scrubs interior and exterior surfaces of car, using brush, sponge, and cleaning solutions. Scrapes paint from window glass (after window frames have been painted) using putty knife.

May rub varnished surfaces of car after painting to attain smooth even finish.

8595-330 MASKER(any ind.) DPT:687
GED: 2 SVP: 2 EC: I PA: L 4 7

Covers specified parts of motor vehicles, aircraft, boats, canoes, furniture and other items to outline parts to be painted, using masking tape, cardboard and paper by performing any combination of the following duties:
Marks area to be masked on parts or articles, using template or ruler. Cuts or tears paper or cardboard to size. Secures masking in place with gummed tape to protect parts while surrounding areas are spray-painted. Removes masking and gummed tape after painting to prepare article for cleaning. Dips or coats articles with liquid wax when masking tape cannot be used. Cleans articles, using cleaning agents, rags, and vacuum cleaner.
May smooth unmasked surface, using sandpaper. May tape precut masks or stencils to article.

8595-334 STRIPPER(any ind.) DPT:687
GED: 2 SVP: 2 EC: I 7 PA: M 4

Removes paint, enamel, lacquer, stain or other finish from surfaces of furniture, commercial and household appliances and fixtures, motor vehicles and other objects, to prepare them for refinishing:
Inspects surface for defects, such as chips or cracks, dirt and scale, to determine refinish procedures. Removes finish, using cloth, brush, steel wool, scraper and solvent. Smooths rough spots or defects, using sandpaper, sandstone and power sander. Feels sanded area to verify smoothness of finish.
May record model number of unit and nature of defect. May immerse small articles in vat filled with caustic soda solution to facilitate removal of finish.

8595-399 OTHER PAINTING AND DECORATING OCCUPATIONS, EXCEPT CONSTRUCTION

This group includes painters and decorators except construction painters and decorators, not elsewhere classified; for example, those who spray protective coating solution on domestic food containers, operate paint-stripping machines to paint lines on highway surfaces, tend power hoists to lift and dip metal pipes, tend wax-spraying machines to coat paperboard, brush shellac on cartridge primer seals, apply paint to surfaces or objects on stage set, form picture frame mouldings by hand and coat interiors of glass flasks with silvering solutions. Typical examples of occupational titles covered by this residual group definition are:
Frame Moulder(misc. prod. fab., n.e.c.)
Glass-Flask Silverer(scient. & ind. equip., n.e.c.)
Painter, Stage Settings(broadcast, motion pic. & stage)
Shellacker(explosives)

8596-INSPECTING, TESTING AND GRADING OCCUPATIONS: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.

This unit group includes occupations in inspecting, testing and grading work, as described under the term titles, 02-170 INSPECTOR (any ind.), 02-430 TESTER (any ind.) and 02-150 GRADER (any ind.), concerned with quality control activities in fabricating, assembling and repairing a variety of products such as: ships and boats; munitions and explosives; jewellery and silverware; musical instruments; games, toys and sporting goods; brooms and brushes; and miscellaneous paper products. Includes quality control activities in painting, or applying protective, decorative or identifying coatings to various products or equipment. Inspecting occupations in construction work are classified in Unit Group 8796, INSPECTING AND TESTING OCCUPATIONS, CONSTRUCTION, EXCEPT ELECTRICAL.

Inspectors and Testers, Ship and Boat Building
8596-110 through 8596-122

8596-110 INSPECTOR, HULL(ship & boat bldg.) DPT:281 hull surveyor.

GED: 4 SVP: 8 EC: B 6 7 PA: H 2 3 4 7

Inspects ships' hulls, compartments, decks, rigging, masts, davits and related equipment during construction, repair, or prior to refit, to verify conformity with plans and specifications, or to determine need for repair and life expectancy:

Examines hulls, hull fittings, plate and framing alignment, riveting, caulked-plate edges, welded seams and painted surfaces for defects and corrosion. Inspects equipment such as anchors, cable, propellers and rudder. Tests lifting devices, using static load-testing equipment. Performs hydrostatic and other tests or observes testing of tanks, compartments, double bottoms, sea chests, decks and structural parts for deterioration, corrosion and water-tightness. Opens and closes doors, manhole covers, hatches and hull valves, manually or by operating remote controls, to verify fit and ease of operation. Inspects heating and ventilation systems to verify size of vent ducts, and that installations conform with specifications. Starts blowers, and measures volume and velocity of air in systems, using measuring devices, meters and gauges. Inspects piping and valves of ship's service system during pressure tests, for leakage and strength of materials. Records inspection data and compiles inspection report.

May make drawings or sketches of structural features of ship to aid in dry docking or ship repair.

8596-114 INSPECTOR, WOODEN BOATS(ship & boat bldg.) DPT:667

GED: 3 SVP: 5 EC: I PA: L 4 5

Inspects small craft, such as canoes and moulded-plywood boats, for flaws in workmanship and materials during manufacture:

Visually examines framing, planking, covering, waterproofing and finish of hulls for defects. Feels finished surfaces to detect rough spots. Indicates defects to workers and instructs them in proper techniques. May keep production and employee-time records.

8596-118 INSPECTOR AND FINISHER, FIBREGLASS BOATS(ship & boat bldg.) DPT:684

GED: 3 SVP: 4 EC: I 5 PA: L 3 4 7

Inspects fibreglass boats for flaws in workmanship and completeness of accessories, and touches up minor surface imperfections prior to shipping:

Examines parts such as deck and hull for scratches and other minor defects. Verifies alignment of spray rails and accessories, using rule and other measuring devices. Reports missing or defective accessories for installation or replacement. Paints, waxes and polishes defects, using brush, spray can and power polisher. Applies trade mark or decals to boat, using water, cloth, ruler and hand roller. Records production data indicating serial number, model and size of boat.

8596-122 LEAK TESTER, ALUMINUM BOATS(ship & boat bldg.) DPT:687

GED: 2 SVP: 2 EC: I 4 5 PA: M 3 4

Tests aluminum boats for leaks, using water tank and pneumatic-testing equipment:

Lifts and places boat in water-filled tank, assisted by other worker, prior to testing. Tests watertightness of welded or riveted areas by guiding pneumatic cylinder (gun) along inside seam or positioning cylinder over rivet, and looking for air bubbles in water to detect and determine location of leak. Marks location of leak, using crayon. Removes boat from tank and carries it to next work station for reworking or packing. Empties, cleans, and refills water tank, using hose, brush and solvent.

**Inspectors and Testers, Munitions and Explosives
8596-140 through 8596-156**

8596-140 INSPECTOR, MUNITIONS(explosives) DPT:361

GED: 3 SVP: 5 EC: I 6 PA: L 4 7

Inspects bombs and artillery shells and their components for defects, such as cracks or incorrect sizing, and verifies their conformity to specifications:

Verifies critical dimensions such as external diameter and depth of

fuse orifice, using gauges. Ensures integrity of joints by applying vacuum, or water under pressure and reads gauges, to detect leaks. Inspects fuses, primers and detonators to verify homogeneity and level of explosive charge, using magnifying glass. Ensures free movement of fuse plunger and spring. Tests action of interrupter safety pins, using rotating chuck and photo-electric scanning device. Measures boosters and lockpins, using gauges. Verifies accuracy and legibility of data appearing on tags or assemblies. Writes reports on defect patterns or notifies foreman to recommend changes in assembly procedures. Sets aside rejected units for reworking or scrap.

May inspect rocket motors, cases and fuel mixtures and be designated accordingly,

Rocket-Motor Inspector

8596-144 INSPECTOR, AMMUNITION-LOADING(explosives) DPT:364

GED: 3 SVP: 5 EC: I 5 6 PA: L 4 7

Inspects and tests small arms ammunition to verify conformance with specifications:

Collects sample quantity of cartridges or shotgun shells as they emerge from loading and assembling machines. Tests crimping of case around bullet, using bullet-extractor that registers force required to withdraw bullet from case. Cuts open shotgun shells, using knife, to verify correct placement of wads, shot, and powder. Weighs powder collected from several individual shells on balance scale and computes average weight. Weighs shot pellet load collected from several individual shells on scale, counts number of pellets in load, and computes number of pellets per ounce. Estimates average pellet size, using graduated device. Examines cartridges and shotgun shells visually for defects such as burrs, scratches, improper printing or sealing and damaged bullets. Measures and gauges cartridges and shotgun shells to ensure conformance to established standards, using dial and ring gauges. Reports patterns in ammunition defects that indicate loading or assembling-machine malfunctions to supervisor. Records test results in tabular or narrative form for quality control purposes.

May inspect mixing, drying, transfer, packaging and storage methods for explosives to ensure conformance to processing standards and safety regulations.

8596-148 TESTER, BALLISTICS(explosives) DPT:384 proof tester.

GED: 3 SVP: 5 EC: B 5 6 7 PA: L 4 7

Measures velocity of projectiles and propellant force of powder charge fired from various types and sizes of weapons to determine ballistic properties of weapons and ammunition, using measuring devices such as micrometer and photo-electric chronograph:

Selects test gun according to type and caliber of projectile to be fired. Secures gun in fixture, using hand tools and gauges. Measure velocity of projectile by loading and aiming gun and firing projectile through electron-beam screens that activate chronograph. Converts chronograph reading of elapsed time to velocity in feet-per-second, using reference chart, and records data on inspection forms. Calculates average velocity of projectiles tested. Measures propellant force of powder charge by firing small arms cartridges or shotgun shells into specified target. Retrieves and measures compressed slug for reduction in slug length and converts measurement to pressure expressed in pounds-per-square inch, using conversion charts. Cools, heats or immerses ammunition before firing to determine performance under extreme conditions. Computes average pressure for specified number of cartridges.

May clean and lubricate guns and equipment, using rags, cleaning agents and oil can. May detonate blasting caps and track signals to verify conformance to specifications.

8596-152 DROP TESTER, CARTRIDGE PRIMERS(explosives) DPT:387

GED: 3 SVP: 3 EC: I 5 6 PA: L 4

Tests impact sensitivity of sample cartridge primers by dropping weight onto primers from specified heights:

Secures primer in test-firing fixture. Presses button to drop steel ball onto firing pin from predetermined height to detonate primer. Determines and records percentages of fires and misfires of sample primers detonated from range of specified drop-heights. Plots test

results on graph paper to produce distribution curve indicating primer sensitivity.

8596-156 INSPECTOR, EXPLOSIVE-DEVICES(explosives) DPT:687
GED: 2 SVP: 2 EC: I 6 PA: L 4 7

Inspects cartridge primers, detonator tubes or fireworks for conformance to specifications:
Examines items to detect faults, such as cracks, holes, insufficient powder filling or incorrectly inserted components. Verifies depth, internal diameter and absence of foreign matter, using gauges and detector probe. Sets aside defective units for reworking or salvage. May use magnifying glass to inspect primers. May package primers. May light fireworks and measure burning time, using stop watch. May inspect a particular type of explosive device and be designated accordingly; for example, Primer Inspector

**Inspectors, Testers and Graders,
Miscellaneous Products
8596-180 through 8596-399**

8596-180 INSPECTOR, RETURNED MATERIALS(any ind.) DPT:284
GED: 4 SVP: 6 EC: I PA: M 4 7

Tests, dismantles, and inspects equipment, under warranty, returned as defective, to determine cause of complaint:
Inspects product for defects; such as, cracks, missing components, dents, and faulty alignment or tests unit under simulated conditions to determine nature of problem. Dismantles unit and inspects components for conformance to specifications and to verify dimensional accuracy, using various test instruments. Judges validity of customer's claim of defective parts or workmanship to assign responsibility to particular manufacturing or assembly area, and prepares report of findings.
May specialize according to type of product inspected.

8596-184 MATERIALS AND PARTS INSPECTOR(any ind.) DPT:284
GED: 3 SVP: 6 EC: I PA: L 4 7

Inspects metal, wood or plastic materials parts or assemblies for conformance to specifications:
Examines materials and parts, such as, extrusions and plates, and assembled or shaped wood, plastic or metal components, for cracks, flaws and dents. Inspects anodized, plated, painted or polished surfaces for uniform finish and for defects, such as, pinholes, blisters or corrosion, by close observation and by using gauges. Measures contours, angles and radii of parts and drilled holes to determine conformity to drawings, using scales, gauges and surface plates. Inspects materials and assemblies after heat-treating, using micrometers and testing devices. Compares quality of welding and brazing in assemblies with samples and by using fixtures or gauges. Observes pressure-testing of laminated materials to verify wall strength. Stamps approved or rejected materials and writes inspection report.
May inspect or review manufacturing processes and techniques to ensure maintenance of standards. May measure thickness of coatings, using gauges. May specialize in a particular type of inspection activity and be designated accordingly; for example, Heat-Treating and Electro-Plating Inspector
Inspector, Polishing
Machined Parts Inspector
Paint and Finish Inspector

8596-188 FINAL INSPECTOR(furn.) DPT:684
GED: 3 SVP: 6 EC: I PA: M 3 4 7

Inspects completed furniture for defects in construction, finish, or upholstery to determine conformance to standards:
Verifies colour and pattern of upholstery, using specifications and shop orders. Inspects upholstery cover for rips in fabric or seams. Feels padding for firmness. Manipulates upholstery with hands or picks to improve shape or smoothness. Examines wooden surfaces for defects in wood or finish. Stamps, marks, or attaches adhesive colour-codes tape to inspected furniture to indicate acceptance or rejection.

May repair minor defects in wood finish, using heated blade, wax, lacquer, and stain sticks. May remove loose threads from upholstery, using scissors and air-blower. May be designated according to product inspected; for example, Chair Inspector
Radio and Television-Cabinet Inspector
Sofa Inspector

8596-192 INSPECTOR, FINISHES(electric. equip.; electronic equip.) DPT:684
GED: 3 SVP: 6 EC: I PA: L 4 7

Inspects painted, plated and other protective finishes on electrical and electronic parts and assemblies, such as cabinets, panels and transformers:
Reads specifications for parts to determine type of inspections required. Visually and tactually examines finishes for defects; such as, stains, corrosion, blisters, oxidation and bare spots. Verifies conformance of finish to specifications, using colour chart, magnifying glass, scratch tester or film thickness measuring instrument. Records types of tests performed and results of inspection.
May brush solutions on parts to remove finish for inspection of base metal or to test resistance of surface. May observe painting and metal finishing processes to ensure conformity to specifications. May prepare paint chip samples and related data for approval.

8596-196 INSPECTOR, JEWELLERY(jewellery & precious metal prod.) DPT:684
GED: 3 SVP: 6 EC: I PA: S 7

Inspects material received from suppliers, items in process of manufacture and finished jewellery products:
Examines batches of incoming material to ensure conformance with specifications, using micrometers and gauges. Conducts periodic examination of products during manufacture and reports on their suitability for further processing. Examines first completed items from each new production schedule, using hardness and tensile tester, shadowgraph and optical comparator to ensure they are within tolerances set out in specifications as to shape and size and for quality of plating and finish. Verifies weight of article, using scale and prepares articles for microscopic examination. Makes report of findings or issues acceptance or rejection reports. Retains custody of rejected material until disposal instructions are given by supervisor. Keeps files of drawings, samples, reports and documents relating to inspection operations. Prepares inspection reports in conjunction with daily time sheet.

8596-200 INSPECTOR, PIANO(misc. prod. fab., n.e.c.) DPT:284
GED: 3 SVP: 5 EC: I PA: L 3 4 7

Inspects pianos to ensure conformance to standards, and makes adjustments or replaces parts to correct defects:
Examines completed piano action (mechanisms) and removes and replaces defective or broken parts, using hand tools and glue. Verifies alignment of action parts, using straightedge, ruler and gauges, and observes movement of mechanism to test operation. Adjusts and aligns parts, using gauge to obtain specified performance. Examines fit of cabinet at joints, and finish of pianos for scratches and defects. Corrects defects, using hand tools and polishing and rubbing materials, or notes defects and returns piano to production department.
May specialize in inspecting and adjusting piano actions and be designated accordingly, Inspector-Adjuster, Piano-Action

8596-204 INSPECTOR AND TESTER(plastic prod.) DPT:284
GED: 3 SVP: 4 EC: I 6 PA: L 4 7

Inspects and tests articles fabricated from plastic materials for surface defects, hardness, and dimensional accuracy, following specifications or drawings, and using measuring instruments and test equipment:
Visually and tactually examines surface of articles for defects or damage; such as, scratches, indentations, scores, burns, stains or discolourations. Compares colour of article with standard. Verifies weight, dimensions or interchangeability of articles, using scales, gauges, calipers, micrometers and templates. Determines hardness and structural strength of articles, using acid bath, or burst, impact, compression and hardness testers. Records test results and grades or labels articles according to type of defects.

May investigate cause of recurring defects and recommend changes in production procedures. May determine optical distortion of transparent articles. May obtain samples for laboratory analysis.

8596-208 INSPECTOR, PAPER PRODUCTS(paper prod.) DPT:484

GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Inspects paper and paperboard products such as bags, cartons and paper board boxes, envelopes and forms, during corrugating, laminating, printing, cutting, scoring, coating, forming, sealing and packaging processes, for conformance to specifications:

Verifies type and quality of incoming bulk supplies of paper against purchase order. Examines products for defects; such as, blisters, wrinkles, improper forming and sealing glue spots, printing overlap and colour distortions. Measures dimensions and thickness of products, using tape measure, automatic micrometer, gauges or templates. Compares products with standard samples to verify printing quality and colour matching. Weighs coated and uncoated products, using scales, and calculates weight of coating. Tests crush qualities, moisture content and warp characteristics, using test instruments. Soaks carton blanks in dye bath to reveal such imperfections as cracks, scratches in coating or overcreasing. Counts number of articles in bundle or shipping container, at random, to verify quantity. Examines rejects to determine salvageable items and routes unusable material to scrap baler. Records findings on inspection report.

May be designated according to type of product inspected, or according to fabricating process involved; for example,
Inspector, Assembly
Inspector, Cards and Forms
Inspector, Folding Cartons
Inspector, Paper Bags
Inspector, Tubes

8596-212 INSPECTOR, FILTER TIP(tobacco) DPT:664

GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Inspects cigarette filter plugs (tips) to detect imperfections:
Removes samples of filter plugs from conveyor of filter-making machine and examines plugs for dirt and irregularities in size, firmness, sealing and cut. Tears paper from plugs, using knife, and examines filter material for defects. Measures and examines plug seams, using magnifying glass and graduated scale. Records findings on control chart. Notifies machine tender or machine adjuster of deviations from specifications.

May compute ratio of rejects and keep production records.

8596-220 SHADOWGRAPH OPERATOR, SMALL-PARTS INSPECTOR(any ind.) DPT:684

comparator operator.

GED: 3 SVP: 4 EC: I PA: L 4 7

Inspects small machine or tool parts; such as gears, bearings, cams, pivots, drills, taps and cutters, for defects in finish and dimensions, using device that projects magnified shadows of parts on screen:

Reads specifications of parts to ascertain form and degree to be magnified. Places chart (celluloid disk imprinted with enlarged outline of part to scale) over translucent glass disk of comparator (shadow-graph) machine. Selects and inserts lens into machine, according to size parts, and manually adjusts mirrors to magnify parts. Positions and secures parts in machine fixture. Turns light on, and moves levers of machine to bring shadows of parts into focus with chart outline. Examines shadows for imperfections of finish and inaccurate dimensions. Places accepted or rejected parts in proper tray or rack. Records findings on work order.

May rotate parts in holding fixture to examine all surfaces and to verify concentricity of parts.

8596-224 TESTER, PACKAGING(pharm. & toil.) DPT:684

GED: 3 SVP: 4 EC: I PA: L 4 7

Tests physical characteristics of containers and packaging used for drug and toilet articles, for conformity to specifications:

Selects containers at random from production lines and carries out dimensional and strength tests, using instruments, such as micrometer, bench or optical comparator, testers and gauges, to ensure compliance with specifications. Performs bottle cap removal tests, using torque meter. Moves mechanical parts of assembled containers to ensure

proper functioning. Records instrument readings of container characteristics, such as height, width, diameter, angles and pit. Verifies and adjusts inspection equipment to maintain calibration, using master gauges.

May provide container production line set-up men and supervisory staff with information on standards and specifications to improve production procedures. May determine loss resulting from rejections. May conduct quality audits on vendors of packaging materials, and analyze variations in sales to detect relationship to packaging defects.

8596-228 CASKET INSPECTOR(misc. prod. fab., n.e.c.) DPT:687

GED: 3 SVP: 4 EC: I PA: H 4 7

Inspects assembled caskets visually and tactually to verify conformance to specifications:

Places caskets on stand for examination. Examines casket lining for irregularities, such as faulty fitting, discolouration of material, unconcealed tacks, and bulges in padding. Opens and closes top panel to determine presence of obstructions. Inspects casket exterior for torn covering, nicks, spots, incompleteness, misalignment, and imperfect finish. Removes spots from lining and cover with solvent. Fastens loose lining to casket body, using glue. Identifies types of defect on job orders or chalks areas of imperfect polish, and returns caskets to workers for repair. Keeps rejection records, noting number of units inspected and rejected, and reason for rejection.

8596-232 GOLF-CLUB INSPECTOR AND WEIGHER(sport. & toy) DPT:687

GED: 3 SVP: 4 EC: I PA: L 4 7

Inspects golf clubs for defects and weighs them to obtain swing weight for matching irons:

Visually inspects golf clubs for damage or missing components. Positions club in holding fixture of scale with grip in holder and head extending over and beyond fulcrum point. Reads pointer on scale to obtain swing weight. Wraps heads of acceptable weighed club in protective bag and tapes bag to shaft, using coloured tape to identify swing weight of club. Places wrapped clubs in tote boxes. Writes rework order for defective clubs.

8596-236 INSPECTOR-GRADER, HOCKEY STICKS(sport. & toy) DPT:687

GED: 3 SVP: 4 EC: I 5 PA: L 4 7

Examines hockey sticks for defects and grades them according to quality:

Examines hockey-stick handles and blades for defects such as splits, faulty edges and imperfectly glued joints. Presses hockey-stick blade sideways on floor to test flexibility of handle. Examines wood grain in handle to determine quality of wood. Places sticks in different hand trucks, according to grade.

May straighten hockey-stick handle, or adjust blade angle, using steam and forcing blade between wood blocks on floor.

8596-240 BALL INSPECTOR AND REPAIRER(sport. & toy) DPT:684

GED: 3 SVP: 3 EC: I PA: L 4 7

Inspects finished baseballs or softballs and repairs defects:

Examines ball for defects; such as, crooked, uneven or raised stitches, lumps, and irregular shape. Straightens crooked stitches by pulling or prying them into place with awl. Places ball into bench press and clamps tops of press to flatten stitches. Pushes curved awl through seams to press and smooths lumps under cover of ball. Rejects non-repairable and out-of-shape balls. Keeps records of accepted and rejected balls.

8596-244 GOLF-CLUB ADJUSTER(sport. & toy) DPT:684

GED: 2 SVP: 4 EC: I PA: M 4 7

Inspects golf-club irons to verify conformance with specifications and adjusts angles of head, using lead mallet:

Measures angle of loft and lie, using gauges, and compares with specification charts. Places head on wooden pad and strikes it with lead mallet, to adjust neck or head to specified angle.

May sand plastic adapter even with chromed hosel and buff surface to reproduce finish polish.

8596-248 INSPECTOR, SLIDE FASTENER(misc. prod. fab., n.e.c.) DPT:687
zipper inspector.
GED: 2 SVP: 4 EC: 1 PA: L 4 7

Measures samples of slide-fasteners (zipper) and links for conformance to specifications:

Measures length of zipper chain, using ruler and counts number of scoops (links) per length. Examines chain and scoops for defects such as smashed, cracked, burred or missing scoops, or for uneven spacing. Opens and closes zipper to determine ease of sliding and smooth action of slider. Prepares report of defects found according to type of defect. Notifies supervisor of machine malfunction, found as a result of identification card accompanying completed product. Examines finish of enameled chains. Sorts defective zippers according to defect, and returns them for repair.

8596-252 TOY INSPECTOR(sport. & toy) DPT:687
GED: 2 SVP: 4 EC: 1 PA: L 4 7

Inspects finished toys, such as dolls, trucks, pedal cars, and other mechanical toys and parts fabricated from a variety of materials, for conformance to manufacturer's standards:

Visually and tactually examines metal, wooden or plastic workpiece for defects; such as, chips, scratches, or mars, faulty operation of moving parts, and missing accessories. Verifies overall product for completeness and accuracy of assembly, and to determine if structural formation meets specifications. Inspects decal application or markings for location and form. Routes defective items for repair, salvage or scrap and transfers accepted workpieces to further processing or packing stations. Keeps rejection records or verbally reports defects. May perform minor repairs such as touching up paint, applying adhesive to loose plastic parts, or tightening screws. May wipe toys with damp sponge or cleaning solution to remove grease or finger marks.

8596-256 WALLPAPER INSPECTOR(paper prod.) DPT:687
GED: 2 SVP: 4 EC: 1 5 PA: L 4 7

Inspects wallpaper for pattern and colour matching, and printing defects:

Lifts slack length of wallpaper from machine rack or hangs newly-printed lengths of wallpaper on suction board. Examines wallpaper for aesthetic effect, pattern and colour matching, accurate registration of colours and printing defects such as, colour splashes, smudges and discolouration. Reports defects to machine operator for correction of printing irregularities. Authorizes winding-up of wallpaper on reel and printing of remaining rolls of paper.

May investigate complaints from customers and arrange replacement.

8596-260 COATING-LINE CHECKER, HARDBOARD
(woodworking) DPT:667
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Inspects finished panels of hardboard for flaws in colour of paint and uniformity of coating:

Examines board emerging from drying stage after coating to detect streaks, brush marks, unpainted areas and presence of foreign matter in paint. Conducts flame and colourimetric tests on coated boards to verify conformity of product to plant standards, using standard test procedures and equipment. Notifies equipment operator or supervisor of coating defects.

May reject faulty boards. May inspect boards for sawing defects.

8596-264 EYEGLASS-FRAME INSPECTOR AND SORTER(misc. prod. fab., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Inspects metal and plastic eyeglass frames and frame parts, such as temples, rims, nose pads and bridge pieces, for scratches or other defects in workmanship or material:

Verifies measurement of temples and bridge, using adjustable gauge. Examines completed frames for chips and flaws, general appearance and for conformity to specifications. Segregates defective frames. Sorts frames according to size, colour and style for packaging. Cleans residue and foreign particles from around eyeglass frames, using sharpened bamboo stick and cleaning tissue. Maintains records of frames inspected and nature of faults found.

8596-268 INSPECTOR, AMPOULE(pharm. & toil.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Examines ampoules filled with liquid drug products for apparent defects in contents and containers:

Holds ampoules against light source or mat background and examines them, visually or using magnifying glass, to detect discolouration, presence of foreign particles, moisture in dry powders, imperfect sealing of ampoules, leaks and flaws in glass, and to verify specified filling level. Holds ampoules alternately against black and white background to facilitate examination.

May count and record number of inspected units and place in containers. May clear jams on conveyor.

8596-272 INSPECTOR, DRUGS AND TOILET PREPARATIONS(pharm. & toil.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Examines drug and toilet products and containers for defects:

Selects samples of packaging materials, filled containers or products for inspection. Visually examines tubes, bottles, cartons or cans for defects such as chips, cracks, torn labels and discolouration. Verifies coding and sealing or pull tape. Measures sample of packaging components or containers to verify specified dimensions, using micrometer, gauges, rulers or calipers. Fills product containers with liquid and empties into graduated cylinders to verify container capacity. Tests cap sealers, using hardness tester. Weighs, or counts content of sample containers to verify data on label. Examines sample of products for appearance, colour, odour, flavour or clarity, and rejects those that do not conform to standards. Records inspection and test results. Sorts rejects, according to type of defects, for further laboratory tests, reprocessing or discarding.

May inform packaging and production departments of rejects and reasons. May be designated according to type of product inspected; for example, Inspector, Medicinal Products Inspector, Soap and Toilet Goods

8596-276 INSPECTOR, MATCHES(misc. prod. fab., n.e.c.) DPT:687
GED: 2 SVP: 3 EC: 1 PA: L 4

Inspects boxed matches to verify conformance with specifications:

Opens sample cases of matches and inspects boxes for labelling and packing. Consults inspection charts for specifications. Examines matches for quality of coating. Ignites several matches to ascertain that they strike and burn efficiently and safely. Routes rejected loads for further inspection or disposal as required. Records results of inspection.

8596-280 INSPECTOR, PAINT SPRAY(any ind.) DPT:687
spray-paint inspector.
GED: 2 SVP: 3 EC: 1 7 PA: L 3 4 7

Inspects sprayed paint, enamel, lacquer, varnish or shellac finishes on metal or wooden articles, such as furniture and household appliances, sporting goods, and communication and transportation equipment:

Examines workpiece for scale, streaks, cracks, scratches, unpainted areas or shade variances, to ascertain conformance to standards. Marks workpiece with symbol to indicate defective area and type of repair needed. Marks or reports other defects to supervisor, such as broken or cracked welds and distortion, incompleteness or misalignment of components. Records number and type of units rejected and reasons for rejection.

May touch up defects, using sandpaper, brush and spray gun.

8596-284 SHIPPING INSPECTOR, FURNITURE(furn.; ret. trade) DPT:687
furniture checker.
GED: 2 SVP: 3 EC: 1 PA: L 3 4 7

Inspects furniture prior to shipment to retailers or customers:

Examines surface of furniture for nicks, scratches and cracks. Opens and closes drawers to ensure fit. Inspects furniture for matching and missing parts such as handles and legs. Touches up scratches with proper coating mixture, by hand. Places keys in cloth bag and ties bags to drawer handle. Rejects defective units and routes them to repair department or factory.

May clean metal units, using soap, water and cloth. May re-pack furniture if container damaged. May verify furniture with bill of lading or invoice to ensure correct shipment, and address and route merchandise.

8596-288 FOUNTAIN-PEN INSPECTOR(misc. prod. fab., n.e.c.) **DPT:684**
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Inspects fountain pens for defects:
Verifies alignment of pen points, using magnifying glass, and inserts feeler gauge to determine whether spacing between points conforms to specifications. Opens and closes pen points to adjust spacing between points, using hand tools. Writes with fountain pen to determine legibility and ease of writing. Feels nib manually to detect surface defects. Rubs nib against leather-pad-burnishing tool to smooth contour.
May inspect fountain pen nibs only to insure that smoothness, contour and dimensions conform to specifications, and be designated accordingly.
Nib Inspector

8596-292 BALL WEIGHER(sport. & toy) **DPT:687**
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Grades and matches wound softball or baseball cores, covers and thread prior to assembly, to ensure total weight of each ball meets standards:
Weights wound core, cover and thread, using shadowgraph scale. Grades and matches off-standard-weight covers and cores so that combined weight meets standard for assembled balls. Places sets of covers and cores together on rack for assembly by ball stitchers. Keeps production records.
May place sewn balls on rolling machine to flatten seams and iron out imperfections. May sew covers on softballs and baseballs.

8596-296 INSPECTOR, UMBRELLA(misc. prod. fab., n.e.c.) **DPT:687**
examiner, umbrella.
GED: 2 SVP: 2 EC: 1 PA: L 4

Inspects and prepares umbrellas for packing:
Opens collapsible frame and examines covers for pattern matching, tears and stitching defects. Inspects frames for defects, such as bent ribs and missing tips. Cuts loose threads, using scissor. Stacks rejected umbrellas for repair. Folds accepted umbrellas and presses snap-fastener at end of tie. Inserts umbrella into case to form complete unit.

8596-300 PEN AND PENCIL INSPECTOR(misc. prod. fab., n.e.c.) **DPT:687**
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects ball-point pens and wooden pencils for defects:
Compares colour, style and printed information on pen or pencil with written specifications. Writes with selected sample of ball-point pens to determine that inking mechanism of cartridge is functioning. Examines pens or pencils for defects such as dents, scratches, or misplaced lead. Sorts rejected items according to defects for reprocessing. Packs pens and pencils in boxes.

8596-304 PRODUCTION-LINE INSPECTOR(misc. prod. fab., n.e.c.) **DPT:687**
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Examines a variety of small finished products, such as bottle caps, buttons, tiles, matchbooks, or similar items, passing on conveyor belt:
Observes product passing on conveyor. Removes items having spots, chips, cracks, faulty gluing or other defects and places them on salvage conveyor belt or into containers. Sorts products according to type, colour, size, and other characteristics. Clears jams.
May remove articles from conveyor for examination or measurement to determine conformity to standards or send samples to laboratory for testing. May fill hoppers and control speed of conveyor. May be designated according to type of product inspected; for example,
Inspector, Buttons
Inspector, Corks and Bottle Caps
Inspector, Matchbooks

8596-308 STENCIL EXAMINER(paper prod.) **DPT:687**
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Inspects duplicating stencils used to reproduce printed copies of material, for defects, prior to mounting on backing sheets:
Holds stencils over fluoroscope to determine presence of defects such as holes, tears, and imperfect surface. Discards defective stencils. Places layer of paper between stencils to protect them. Measures stencils for conformance to size, using gauge.

8596-399 OTHER INSPECTING TESTING AND GRADING OCCUPATIONS: MISCELLANEOUS PRODUCTS

This group includes miscellaneous fabricating, assembling and repairing inspectors, testers and graders, not elsewhere classified; for example, those who measure, inspect and pack billiard table coverings, inspect and trim fabric buffing wheels, sort and bundle broom corn fibres, or inspect used beer cartons. Typical examples of occupational titles covered by this residual group definition are:
Billiard-Cloth Inspector(sport. & toy)
Broomcorn Grader(misc. prod. fab., n.e.c.)
Buffing-Wheel Inspector(garment & fabric)
Returned-Case Inspector(malt liquors)
Trunk Inspector(leather goods)

8598-OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK: PRODUCT FABRICATING, ASSEMBLING AND REPAIRING, N.E.C.

This unit group includes occupations, not elsewhere classified, in labouring or other elemental work as described under the term title, 02-190 LABOURER/ELEMENTAL WORKER (any ind.) concerned with fabricating, assembling and repairing manufactured products. Activities include: cleaning, blending, dipping, coating, repairing, cutting, trimming and otherwise assembling and finishing miscellaneous products.

Assembling and Finishing Miscellaneous Products 8598-110 through 8598-162

8598-110 GLUER(any ind.) **DPT:687**
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Glues material, such as, paper, cloth, leather, wood, metal, rubber, or plastic together, following specified procedures:
Applies adhesive to surface of material by brushing, dipping, holding material against rotating saturated brush, or feeding material through gluing machine. Presses material together by hand or with machine roller, or clamps material in fixture to bond it together. Wipes surplus adhesive from seams, using cloth or sponge.
May mix glue according to specifications, and fill glue reservoir. May be concerned with gluing a particular product and be designated accordingly.

8598-114 LABOURER GENERAL, ASSEMBLY LINE(any ind.) **DPT:687**
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Performs any combination of the following duties in the assembly of a variety of small mechanical, electrical, or other types of products; such as, food grinders or mixers, doll strollers, protective body pads and other items:

Positions parts in specified relationship to each other, using hands, tweezers, or tongs. Bolts, screws, cuts, clips, cements or otherwise fastens parts together, using hand tools or portable powered tools. Uses previously set-up machines, such as arbor presses, punch presses, taps, spot welding machines or riveting machines to fasten, force fit, or trim excess material on assembly line. Examines components, using fixed gauges or test devices. Tests effectiveness of mechanisms, using a variety of simple tests.

May be assigned to various work stations according to production requirements or to reduce fatigue factors. May specialize in a particular assembly procedure or assemble a specific product and be designated accordingly; for example,

Assembler, Sports Headgear(sport. & toy)

8598-118 ASSEMBLER, PENS AND PENCILS(misc. prod. fab., n.e.c.) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Assembles ballpoint pens and mechanical pencils by either of the following methods:

1. Places components, such as barrels, cartridges, caps and end-buttons into hopper of automatic assembly machine. Lifts assembled pens or pencils from machine spindle, and tests mechanism for loose components. Presses button to stop machine when malfunctions occur. 2. Selects pen or pencil parts, according to specifications. Places parts together guided by edges, holes, and slots, and fastens devices, such as clips or prongs on parts. Positions parts in holding device under ram of press and depresses pedal that lowers ram, forcing interlocking parts together, or positions parts in holding device of machine that clinches prongs or clips. Fits interlocking parts together, or screws threaded parts together by hand.

May use pneumatic or screw clamps or rotating table equipped with vertical pegs to hold parts during assembly. May slip band into groove on barrel or insert part in hand squeezer or crimping tool to tighten band in place. May polish metal or plastic pen parts, holding them against buffing wheel.

8598-122 KNIFE ASSEMBLER, HOLLOW HANDLE(jewellery & precious metal prod.) DPT:687
GED: 1 SVP: 2 EC: 1 3 PA: L 4

Assembles hollow handle knives, by performing any combination of the following duties:

Matches stamped halves of knife handle to form hollow handle. Places handle halves on bed of machine and presses pedal to wind and tie several turns of string around handle halves. Places handles on rack hooks and dips them in tank of flux to prepare handle halves for soldering. Loads handles on screen conveyor that carries them through furnace to solder handle halves together and burn string away. Positions soldered handles in fixture of milling machine and depresses pedal to face handle mouths. Fills hollow milled handle with specified amount of bonding compound, using pressure gun. Inserts stub end of knife blade into hollow handle. Places knife onto conveyor leading to bonding furnace. Unloads bonded knives from furnace and places them into trays.

8598-126 ASSEMBLER, SPECIALTY BRUSH AND MOP(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 5 PA: L 4

Assembles various cleaning tools such as brushes, and mops by performing any combination of the following duties:

Arranges plastic, wood, metal or rubber parts in specified order to make products such as squeegees, ice scrapers or snow-brush heads. Fastens parts together with bolts, screws, clips or cements by hand, or by using tools or previously set-up machines such as presses or riveters. Heats butt ends of twisted wire brush heads, using electric heater, and inserts heated ends in hole in plastic handle. Applies glue and inserts plastic bristles by hand into plastic broom or whisk heads. Folds precut piece of sponge or curly brass mesh and inserts in handle to assemble dish mops or pot cleaners. Assembles brass- wire brush, lint-remover roll and plastic handle to make lint-roller brushes. Inserts shaped metal rod through binding material of dust- mop heads and ties binding or closes zipper to secure mop head. Staples spring and lever to handle and inserts ends of wire bail through holes in lever to assemble dust-mop handles. Wraps and packs items for shipment. Mounts products under flaps of display cards and glues on plastic blister covers.

May be designated according to product assembled; for example, Assembler, Broom

Assembler, Shovel Handle

Assembler, Whisk

Dust-Mop Maker

Lint-Roller-Brush Assembler

Sponge-Mop Assembler

Twisted-Wire-Brush Assembler

8598-130 CURTAIN-ROD ASSEMBLER(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Assembles traverse curtain rods for shipment:

Secures rod in bench fixture, manually, and inserts cord, master slides, nylon sliders and pulley into rod slot. Slips retaining brackets over ends of rod to complete assembly. Tightens parts with metal screws, using portable electric screwdriver. Packs completed rod into tube and places tube on handtruck.

May cut cord to specified length, using scissors.

8598-134 FILTER ASSEMBLER(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: S 4

Assembles fibreglass filters for use in industrial and domestic heating and cooling units:

Places layer of precut treated fibreglass between perforated metal or treated paperboard sides for reinforcement. Inserts assembly in cardboard or aluminum frame and folds sides of frame over edges of reinforcements. Secures sides in place, using glue and staples. Seals edges of frame, using gummed tape.

May assemble fibreglass bats and aluminum metal sides by sliding bat and sides into outside frame.

8598-138 FOLDER-CEMENTER, SLIDE-FASTENERS(misc. prod. fab., n.e.c.) DPT:687
folder-cementer, zippers.
GED: 1 SVP: 2 EC: 1 PA: L 4

Finishes end of slide fastener by cementing, folding and pressing tape, to reinforce and improve appearance:

Brushes cement onto cloth, folds cemented surface together and inserts folded tape between heated jaws of pneumatic press. Presses foot pedal to close jaws of press. Removes bonded slide fastener from press when jaws open at end of cycle.

8598-142 JEWELLERY-PARTS ASSEMBLER(jewellery & precious metal prod.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: S 4 7

Attaches or fastens jewellery parts to fabricate bracelets, necklaces, brooches or earrings, by hand or machine, by either of the following methods:

1. Grips link and twists link joint open, using pliers. Slides jewellery parts into open link and closes link joint by clinching. 2. Positions jewellery item between jaws of machine, manually. Selects pin or clip and fits end of pin or clip into holes of jewellery item. Depresses pedal to close jaws and squeeze joints together. Visually examines jewellery and rejects defective pieces.

May cut chains or ribbons into specified lengths, using hand cutters.

8598-146 LAMP-SHADE JOINER(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Bonds edges of pre-cut parchment together to form lamp shades, using pressing bars:

Depresses pedal to raise top presser bars and positions edge of parchment on lower bar. Brushes cement on edge of parchment. Bends parchment in circle and position opposite edge of parchment on top of cemented edge. Releases pedal to lower and lock top bar onto parchment to bond edges.

8598-150 NECKLACE ASSEMBLER(jewellery & precious metal prod.) DPT:687
bead stringer.
GED: 1 SVP: 2 EC: 1 PA: L 4 7

Strings beads or other items on fine wire or threads to form necklaces:

Selects beads according to size, colour or pattern specified. Cleans beads in soap and water or other cleaning solution. Guides wire or thread and needle through beads. Counts beads in length of necklace of ensure conformity to standards. Completes stringing by tying knot in thread or bending wire and attaching fastener.

8598-154 PAINT-ROLLER WINDER(misc. prod. fab., n.e.c.)
DPT:687

GED: 1 SVP: 2 EC: 1 PA: S 4

Spiral-winds and glues fabric on tubing to make paint rollers:
Fills glue spreader reservoir. Mounts tubing on power-driven machine spindles and starts machine to rotate tube. Draws fabric strip past dispensing lip of glue reservoir to distribute glue evenly under surface of fabric, or spreads glue on rotating tube with brush. Positions and feeds pre-cut fabric against glued surface of rotating tube as fabric is spirally wound and glued on tube. Removes wound tube from machine spindle.
May cut fabric to specified length, using power shears.

8598-158 SLIDE-FASTENER-CHAIN ASSEMBLER(misc. prod. fab., n.e.c.)
zipper-chain assembler.
DPT:687

GED: 1 SVP: 2 EC: 1 5 PA: L 4 7

Joins stringers of slide fasteners together, using automatic sliding device:
Aligns two lengths of separate stringers (teeth or scoops). Threads ends of stringers under machine rollers and through jig. Pulls ends of stringers to interlock links. Starts interlocking jig that joins stringer together to form slide fastener. Examines fastener for defects, cuts out defective section, using scissors, and splices sections with adhesive tape or hand stapler.

8598-162 VACUUM-BOTTLE ASSEMBLER(glass) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Performs any of the following duties on production line to assemble vacuum bottles:
Coats threaded section of container with silicone by inverting container over applicator pad, and places container on conveyor. Places plastic tip protector on bottom of filling bottle and inserts glass bottle in container. Slips rubber gasket and plastic shoulder over bottle. Places plastic or cork stopper in mouth of bottle. Screws plastic drinking cup onto threaded mouth of container. Places cardboard wrapper over container and removes it from conveyor. Packs container in cardboard box for shipment.
May glue insulating pad to inner bottle of filling unit, prior to assembly and be designated accordingly,
Padder

Cleaning, Blending, Dipping and Coating Miscellaneous Products
8598-182 through 8598-210

8598-182 BARREL LINER, HAND(woodworking) DPT:687
GED: 1 SVP: 2 EC: 1 5 PA: M 4

Coats inside of barrels and kegs with sealing material, such as hot paraffin and pitch to prevent leakage and contact of stored liquid with wood:
Lifts and carries barrels to work position. Switches on electric pot heater that melts sealer. Applies melted sealer to inside of barrel and barrel head, using brush.
May also coat interior of barrel with sealer, using spraying equipment.

8598-186 CLEANER, PORCELAIN-ENAMEL(any ind.)
DPT:687

GED: 1 SVP: 2 EC: 1 5 6 PA: M 4 7

Cleans metal articles that have been coated with porcelain enamel at various processing stages, by performing any combination of the following duties:
Brushes or scrapes dry porcelain from holes and designated areas of workpiece, prior to firing, using rotary or hand brushes and scraping tools. Visually examines enameled workpiece for defects. Sands workpiece to remove dirt, blisters, and lumps, preparatory to cover coat or respray, using sandstone block, sand paper, or pumice stone. Brushes porcelain into nicks to repair minor defects. Marks or sorts workpiece to indicate routing for further repair or processing. Removes excess enamel from dipped parts by hand or blows off dust, using air hose. Cleans workpiece with cloth or water hose to remove faulty bisque, and hangs it on rack to dry prior to dipping or spraying.

May mark workpiece with production number, unit number, or other code. May be designated according to type of enamel product cleaned.

8598-190 LABOURER, CANDLE(misc. prod. fab., n.e.c.)
DPT:687

wax mixer.

GED: 1 SVP: 2 EC: 1 PA: H 3 4

Blends beeswax and paraffin for candlemaking according to formulas and assists other workers to handle materials:
Measures ingredients, such as beeswax, paraffin, and chemical additives according to formulas, and fills vat. Adjusts thermostat to heat vat. Stirs ingredients to blend melted mixture, using wooden paddle. Cleans wax reservoir, vats, and processing equipment, using water, soap, and detergents. Assists other workers in loading and unloading trucks and equipment. Transports materials, products, and equipment to workers to warehouse by carrying or using handtruck.
May rethread moulds in casting machines with wick material from spools. May mix batches of coloured wax and verify colour for conformity to standards. May keep records of batches and quantities mixed.

8598-194 LABOURER, DIPPING(any ind.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: L 4

Immerses articles; such as, curtain pole ends, door stops, marking pens or erasing pencils, and other items into bath of paint to form protective or decorative coating on articles, by either of the following methods:
1. Hammers articles onto nail tips protruding from mounting board, using leather faced wooden mallet. Dips articles into bath of paint, manually, holding board in horizontal position. Mounts board on dripping rack, and transports rack to conveyor that carries articles to drying oven. Pulls dried articles from nails by hand. 2. Places articles in jig, manually, and presses two buttons simultaneously to activate pneumatic press that positions articles in slots of rubber dipping board. Pulls handle to lower cage into paint solution. Removes dipping boards and places them on handtruck. 3. Hangs toy parts on hooks of overhead conveyor that passes through paint dipping and spraying operations. Removes painted items from hooks. Changes hooks of overhead conveyor according to type of toy being painted.
May stir paint in vat, with paddle, to ensure shade uniformity.

8598-198 PAPER-CONE DIPPER-AND DRYER(paper prod.)
DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Treats paper cones and tubes in wax and turpentine solution and dries in drying cabinet:
Melts wax in vat and adds turpentine. Loads paper cones and tubes into basket and immerses it in molten solution. Removes basket from vat after specified time, draws mixture from articles and sets it aside for transfer to drying cabinet. Dumps cones and tubes into drying cabinet and starts fan. Packs dried cones and tubes into cartons.
May smooth ends of cones and tubes, using abrasive facing machine.

8598-202 PICKLER AND DIPPER(jewellery & precious metal prod.)
DPT:687

GED: 1 SVP: 2 EC: 1 PA: L 4

Coats jewellery and jewellery fittings with acid solution to protect metal from oxidation during soldering, and cleans soldered articles:
Places jewellery items or fittings in sieve or hangs them on rack. Immerses articles into boiling acid solution for specified time to protect metal from oxidation during soldering. Removes jewellery or fittings from acid bath, lifting sieves or racks, and heats them in oven to harden coating. Dips soldered articles in chemical solutions and water to remove coating. Dries cleaned articles by placing them in oven.
May roll small articles, such as earrings, brooches in heated sawdust to dry them. May load jewellery or plated articles in ultrasonic bath to coat or clean them.

8598-206 MIRROR COATER(glass) DPT:887
GED: 1 SVP: 2 EC: 1 5 PA: H 4

Sprays mirrors with protective coating materials such as copper, shellac and paint:
Removes mirror from drying table and places mirror in spraying booth. Sprays protective coating over silvered surface, using spray gun. Covers mirror with paper to prevent adherence and places mirrors on racks for shipping.

8598-210 SPRAY-BOOTH CLEANER(any ind.) DPT:687
GED: 1 SVP: 1 EC: 1 6 7 PA: M 3 4

Scrapes or scrubs interior surfaces of spray-painting booths and cabinets to remove paint deposits, using hand scraper, brushes, and solvent:

Peels off chemical paint film from interior surfaces of spray booths or cabinets, manually. Brushes with solvent or scrapes surfaces to remove paint adhering to walls or ceiling to clean them thoroughly. Sprays all surfaces with protective coating, using spray-gun-chemical solution. Covers floor of booth or cabinets with protective sheeting.

Repairing, Cutting and Trimming Miscellaneous Products 8598-230 through 8598-246

8598-230 CRAYON CUTTER(misc. prod. fab., n.e.c.) DPT:686
GED: 1 SVP: 2 EC: 1 PA: L 4

Cuts wax stick to make coloured wax crayons, using cutter:
Loads lengths of wax into die and turns handscrew to lock die in place. Starts circular cutter, and runs cutter through holes in die to cut wax to specified lengths. Opens die, places cut length in boxes for storage. Disposes of excess wax.

8598-234 SLIDE-FASTENER REPAIRER(misc. prod. fab., n.e.c.) DPT:687
zipper repairer.
GED: 1 SVP: 2 EC: 1 PA: L 4 7

Repairs and adjusts defective slide fasteners:
Examines rejected fasteners for type of defect and extent of repair required. Pries excess or broken links (teeth or scoops) and damaged slides from chain, using metal pin. Separates prongs of replacement links with pin, and secures links to tape, using hand pliers. Cuts chain to specified length, using hand tool. Inserts and secures bottom stop to tape ends of chain, using pincers, to hold tapes together, and provide stop for slide. Positions slide on chain and crimps sides to mesh links and to provide even sliding action, using crimping tool. Tests slide fastener by drawing slide over links.

8598-238 TRIMMER, BROOM(misc. prod. fab., n.e.c.) DPT:687
clipper.
GED: 1 SVP: 2 EC: 1 PA: L 4

Cuts brooms to specified length, using rotary cutter, and removes rough fibre ends:
Sets indicator gauge according to broom length specified. Positions broom on turntable and pushes table to feed edge of broom into rotating circular knife. Examines brooms and removes defective fibres. Cuts off end of twine used in sewing.

8598-242 TRIMMER, PAPER-DOILIES(paper prod.) DPT:687
GED: 1 SVP: 1 EC: 1 PA: L 4

Trims excess paper from edges or centers of paper-lace doilies, by hand:
Lifts bundle of sheets containing paper doilies onto table at end of embossing machine. Pounds edges of bundle with wooden mallet to loosen and remove excess paper. Pulls excess paper from edges of paper doilies, manually. Pokes excess paper from holes in doily design, using blunt-end of poker. Bundles trimmed doilies and places them into cardboard boxes.

8598-246 WALLPAPER PREPARER(paper prod.) DPT:687
GED: 1 SVP: 1 EC: 1 PA: M 4

Prepares wallpaper rolls for printing:
Strips outside wrapper from rolls of wallpaper stock. Cuts away torn, soiled or creased section, using knife. Transfers stock to printing machine, using handtruck, or by rolling stock on floor. Cleans working area at end of shift.
May apply ground coat to paper by running material through coating machine.

Fabricating, Miscellaneous Products

8598-266 through 8598-286

8598-266 BAGGING-MACHINE FEEDER(any ind.) DPT:686
packer-stitcher feeder.
GED: 1 SVP: 2 EC: 1 6 PA: M 4

Feeds bag sleeves into machine that stitches bag ends, or sews glued tape to ends to seal bags or to form overlap for self-sealing bags:
Lifts sleeves from load table and positions them individually on moving conveyor leading to machine that stitches bottom ends and cuts string and tape. Fills individual bag with products, using equipment such as compressing platens and ram. Feeds bags, containing products, into stitching-machine that seals top end of bags.
May verify weight of packages, using scale, and reject overweight or underweight bags. May be designated according to number of ends sewn; for example,
Single-End Sewer

8598-270 CRÊPING-MACHINE-OPERATOR HELPER(paper prod.) DPT:687
GED: 1 SVP: 2 EC: 1 5 PA: H 4

Performs routine manual duties to support the operation of crêping machine:
Transports paper rolls from storage area to crêping machine using handtruck. Helps operator to mount paper roll on machine. Carries pails of dye to machine and fills dye pans. Weighs finished rolls. Cleans working area using broom and rags. See also definition for term title, 02-160 HELPER (any ind.).

8598-274 PAD GLUER, HAND(paper prod.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: M 4

Glues one end of stack of paper and slices stack into sections for making such products as notebooks and pads:
Places interleaves with cover at top and bottom of stack. Brushes coat of glue on one end of stack, using brush. Covers end with cheesecloth and brushes with glue. Slices stack of paper into sections, using paper cutter, and carries to skids.

8598-278 PENCIL-BLANK PRESSER(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 5 PA: M 4

Performs various duties in the fabrication of wooden pencils:
Places open clamps between jaws of press and positions pre-cemented lead-filled slats in clamps to hold wooden pencil slats while cement dries. Turns wing nuts to tighten clamps and hold pencil blanks firmly. Places stacks of clamps under hydraulic press and depresses pedal to close jaws. Depresses pedal to open press and remove metal clamps. Places blanks in hopper of sanding machine that removes excess glue and lead from blanks. Places sanded pencil blanks in hopper that feeds conveyor to rounding machine. Replaces and adjusts sandpaper straps, using hand tools.

8598-282 PREPARER, CORN BROOM MATERIAL(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 7 PA: L 4

Prepares corn broom materials, prior to assembly, by any of the following methods:
Brushes ends of broomcorn against teeth of rotating cylinder to remove seed and chaff. Shakes stems of broomcorn against table to align ends. Positions stems on table against gauge and lowers blade to cut stems to specified length. Draws broomcorn through comb, to

separate long straws from short straws. Gathers long and short straws into separate bunches and draws them through comb, butt end first, to straighten them. Ties bunches into bundles and stacks them in racks for further processing.

May perform a specific duty and be designated accordingly; for example,

Cleaner and Cutter, Brooms

8598-286 TRUNK COVERER(misc. prod. fab., n.e.c.) DPT:687
GED: 1 SVP: 2 EC: 1 5 PA: L 4

Attaches prepared sheet metal sections to trunk boxes and lids to protect and reinforce trunk parts:

Places box or lid over anvil. Positions sheet metal section on sides or lid of box. Staples section to trunk parts, using pneumatic gun. Places covered boxes and lids on conveyor for further processing.

Other Elemental Occupations

8598-306 through 8598-399

8598-306 CLIP-LOADING-MACHINE FEEDER(explosives) DPT:686
GED: 1 SVP: 2 EC: 1 5 PA: H 4

Feeds machine that positions cartridges into clips, preparatory for use in small arms magazines:

Feeds clips and loaded cartridges into hoppers of machine that automatically forces clip over cartridges for use in small arms magazines. Observes machine operation, stops machine when jams occur and frees jammed clips or cartridges, using metal bar.

8598-310 SILVERING-MACHINE FEEDER(glass) DPT:686
GED: 1 SVP: 2 EC: 1 PA: VH 4

Performs any of the following duties in the silvering of mirrors:
Reads order slip showing dimensions of plate glass to be processed. Lifts, carries, and positions plate glass on floor of truck, using suction cup to help in moving heavy plate glass. Moves loaded truck near silvering machine. Feeds plate glass onto conveyor of glass silvering machine, with the help of co-worker. Removes mirror at extreme end of conveyor, and positions mirror on truck. Places sheets of paper between each mirror to avoid contact of silvered surfaces. Moves loaded truck to next section and pulls empty truck near silvering machine.

8598-314 BANDOLEER STRAIGHTENER-STAMPER(explosives) DPT:687
GED: 1 SVP: 2 EC: 1 PA: S 4

Prepares fabric bandoleer belts for insertion of loaded small arms ammunition clips:

Cuts open bundles of bandoleer belts, using knife and unfolds, straightens and places them into lots of specified quantity. Reads work order and stamps identifying information on each bandoleer for subsequent packing operations by other workers. Records number of bandoleers processed during shift.

8598-318 DECAL SELECTOR-APPLIER(rail. trans.) DPT:687
automatic-car-identification stenciller.
GED: 1 SVP: 2 EC: 1 PA: L 4

Selects and applies adhesive coded decals on railroad freight cars, for automatic identification system:

Consults car identification chart and selects coded decals that match completed railroad freight cars. Cleans surface to be covered by decals, using cloth and solvent. Removes protective paper from back of decals and positions them on clean surfaces, using template. Smooths out air bubbles with roller or edge board. Applies varnish over decals, using paint brush. Records information, such as type and capacity of freight cars, and codes of decals applied on freight cars.

8598-322 ORNAMENTAL-STONE SETTER(jewellery & precious metal prod.) DPT:687
GED: 1 SVP: 2 EC: 1 PA: S 4 7

Sets ornamental stones in metal jewellery articles by either of the following methods:

1. Deposits glue in settings with pick and places stone in each setting, using tweezers. 2. Places stone in setting and presses prongs around stone with hand tool.

May be designated according to method of setting stones or type of stone set; for example,

Pronger
Rhinstone Setter

8598-326 STAMP FILLER(any ind.) DPT:687
GED: 1 SVP: 2 EC: 1 7 PA: L 4 7

Applies letters and fills depressions to provide colour identification, model numbers or designs on articles, using brush, roller or spatula:

Reads work order for filling instructions. Cleans area to be coloured, using solvent-soaked cloth. Fills lettering or design depressions with paint, lacquer or ink of specified colour. Wipes excess material from surrounding surfaces, leaving depressed areas filled with colouring material.

May stamp information on article, using press. May dry filled workpieces in infra-red oven.

8598-330 LABOURER, SHIPYARD(ship & boat bldg.) DPT:687
GED: 1 SVP: 1 EC: O 5 6 PA: H 3 4

Performs any combination of the following duties in a shipyard:

Loads and unloads vehicles, using handtruck or dolly. Washes trucks and other vehicles. Cleans ships, piers, drydocks and other working areas, using broom and water hose. Opens shipping crates, using hammer and pinch bar. Sorts lumber, metal and scrap material. Collects and dumps trash. Pours cement on inner bottom of ships and around joints on decks to prepare surface for tiling, or to make joints watertight. Removes paint and scale from ship's metal surfaces, using hand or powered wire brushes. Aids journeyman workers by gathering and supplying materials.

8598-334 PAINT-BRUSH BONDER(misc. prod. fab., n.e.c.) DPT:687
epoxy-pouring operator.
GED: 1 SVP: 1 EC: 1 PA: L 4

Bonds bristles in metal ferrules to fabricate paint brushes, using epoxy bonding solution dispenser:

Holds several bristle-filled ferrules under outlet jet of tank. Depresses pedal to release a measured quantity of bonding solution into each ferrule. Moves ferrules under nozzle until sufficient bonding solution is delivered to secure bristles. Loads bonded brush heads into trays and places them in drying room.

8598-338 RACKER(jewellery & precious metal prod.) DPT:687
GED: 1 SVP: 1 EC: 1 PA: L 4

Racks jewellery articles preparatory to plating, degreasing and enamelling processes:

Arranges pieces of jewellery in rows, or fastens pieces to racks, or strings beads on fine wire and hooks wire on dipping rack. Removes beads from wire after processing and places them in tray, or fastens articles of jewellery, such as earrings, chains, bracelets to racks with clamps, or hooks and carries racks to plating area.

May brush particles of foreign matter from pieces of jewellery preparatory to painting.

8598-399 MISCELLANEOUS OCCUPATIONS IN LABOURING AND OTHER ELEMENTAL WORK, PRODUCT FABRICATING, ASSEMBLING AND REPAIRING

This group includes miscellaneous fabricating, assembling and repairing labourers, and elemental workers, not elsewhere classified; for example, those who assemble stamp pads, smoking pipes, advertising buttons, eye droppers, and felt tip pens; mount sunglass lenses; and

string paper tags together. Typical examples of occupational titles covered by this residual group definition are:

Assembler, Advertising Button(misc. prod. fab., n.e.c.)
Bag Stringer(paper prod.)
Eye-Dropper Assembler(glass prod.)
Lens Inserter(scient. & ind. equip., n.e.c.)
Stamp-Pad Finisher(misc. prod. fab., n.e.c.)

8599-OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.

This unit group includes occupations, not elsewhere classified, concerned with fabricating, assembling and repairing a variety of products; such as, ammunition, musical instruments, sporting goods, brushes and mops, zippers, bags and wigs, made from a wide variety of materials. Activities include: regulating, finishing, filling, cutting, slitting, fitting, adjusting, trimming, twisting and winding, by hand or machine. Occupations concerned with the fabrication and assembly of metal products are classified in Minor Group 851/852, FABRICATING AND ASSEMBLING OCCUPATIONS, METAL PRODUCTS, N.E.C. Occupations concerned with fabricating and assembling electrical, and electronic equipment excluding construction work are classified in Minor Group 853, FABRICATING, ASSEMBLING, INSTALLING AND REPAIRING OCCUPATIONS: ELECTRICAL, ELECTRONIC AND RELATED EQUIPMENT.

Ammunition, Explosives and Pyrotechnics Fabricating and Assembling Occupations, n.e.c. 8599-110 through 8599-194

8599-110 AMMUNITION WORKER(gov. serv.) DPT:684
GED: 3 SVP: 6 EC: B 6 PA: H 3 4 7

Inspects, tests, maintains and stores ammunition; such as, bombs, shells, pyrotechnics, rockets and related component parts: Tests and inspects material for functioning and serviceability, using precision gauges and test equipment. Disassembles, repairs, and reassembles ammunition, using hand and power tools, material handling equipment, and following manufacturers' specifications. Assembles and loads explosive and inert elements to prepare ammunition for use. Cleans, stores, and maintains ammunition according to technical manuals. Checks temperature and humidity of storage rooms, using thermometers and hygrometers. Disposes of ammunition due to deterioration, exudation and expired shelf life, by burning, drowning or exploding, according to regulations.

8599-112 FIREWORKS MAKER(explosives) DPT:684
GED: 3 SVP: 6 EC: I 6 PA: M 4 7

Makes fireworks such as bombs, fountains, coloured lights and special designs according to specifications: Weighs, mixes and sifts explosive chemicals according to formula to produce various firework colours and noise effects, using scales, handmixer and metal screens. Fills casings or tubes with powder and compresses it into place, using wooden rods and mallet or hydraulic press. Assembles and connects fireworks together to form special designs, according to specifications, using wire, cardboard and hand tools. May use chemicals previously prepared according to formula by other workers.

**8599-114 TRACER-BULLET-CHARGING-MACHINE
OPERATOR (explosives) DPT:682**
GED: 3 SVP: 5 EC: I 6 PA: M 4 7

Operates multiple-station machine that automatically charges and tamps subigniter, igniter, and tracer powder into bullet jackets to form tracer bullets for military ammunition:
Operates multiple-station machine and observes tracks and stations to

detect malfunctioning or jams. Clears jammed dies, funnels and bullets, using fingers or wooden tool. Observes dies at assembly station and inserts bullet jackets by hand into dies missed at feeder tube. Seats jackets in dies, using hand press. Adjusts stroke of tamping punch by turning setscrews and adjusting stopnuts, using hand tools. Replaces worn or damaged punches, dies or knock-out pins, using hand tools. Weighs powder samples from each charging station on grain scale, and adjusts height of scraper or changes size of scooping device, to regulate bullet loading charge. Measures depth of charge in bullet and tests for firmness of pack, using depth indicator. Weighs loaded jackets on floor scale to determine quantity produced and records production data in logbook. Empties carrier pouches of powder into charging bowls and dumps empty bullet jackets into hopper, to replenish machine supplies. Cleans machine, using air hose and wet cloth.

8599-118 SHOTGUN-SHELL-BODY MAKER(explosives) DPT:682

tube-cutter-and-size operator.

GED: 3 SVP: 4 EC: I 5 PA: M 3 4 7

Operates battery of machines that cut paper tubes to specified length, compress to size and impregnate with linseed oil for use as shotgun shell bodies:

Selects and measures arbors and dies with micrometers and plug gauges to verify specified shell size. Installs and adjusts sizing arbors, dies, cutting rolls, and spacing of pickup fingers, using hand tools. Turns valve to circulate oil through die holders and starts machine. Observes machines for malfunctions and adjusts oil flow that facilitates passage of tubes through sizing dies and impregnates tubes with oil to waterproof and stiffen them. Clears jammed tubes from dies, arbors and feed channels, using hands or pick, and blows out clogged oil lines with air hose. Examines paper tubes for crushed or torn ends. Verifies inside diameter of tubes periodically, using gauge, and dumps tubes into hopper. Lubricates machines, using oil can and grease gun. May truck barrels of tubes in and out of drying room, and record date and time of entry. May record humidity of drying room.

8599-120 SHOTGUN-SHELL-TUBE MAKER(explosives) DPT:682

GED: 3 SVP: 4 EC: I 5 PA: M 3 4

Operates rolling machine to roll paste into paper tubes used in the manufacture of shotgun shells:

Mixes and cooks paper paste for specified time, using heated-power-mixer. Dumps cooked paste from mixer into hopper of rolling machine, and sets thermostat to maintain required temperature. Installs and adjusts pressure rolls, paper guides and applicator brush according to size of shell to be rolled, using hand tools. Starts machine and observes operation to detect machine malfunction. Selects tubes at random and verifies dimensions, using fixed gauge. Removes tubes from discharge hopper and crates and stores them in curing room.

**8599-122 DYNAMITE-PACKING-MACHINE
TENDER(explosives) DPT:685**

GED: 3 SVP: 4 EC: I 6 7 PA: M 4 7

Tends machine that packs dynamite powder into paper shells to form cartridges:

Installs and adjusts tamping sticks and filling nozzles in packing machine according to diameter and length of paper shells to be packed, using nonsparking hand tools. Fills hopper with dynamite powder and fills shuttle board with paper shells. Starts machine and observes operation to ensure correct filling, tamping and crimping of shells. Examines filled shells to detect splits or faulty crimping. May weigh and pack cartridges in boxes and load boxes in transport vehicles. May tend machine that fills paper shells with gelatin-type dynamite.

8599-126 BLASTING-CAP ASSEMBLER(explosives) DPT:684
GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Assembles blasting caps, by performing any combination of the following duties:

Adjusts and aligns hopper and funnel to control amount of powder being loaded into caps, in accordance with formula. Loads feeder plate with lead azide caps, and dumps powder into hopper. Manipulates remote-controlled arm to open bottom slide of hopper to fill caps with powder. Inserts plate of charged caps into press holder and turns

handwheel that lowers punches to press powder into caps. Dips lengths of wire into insulating compound and wraps them with cloth tape. Cuts and inserts wires into fibre plug. Seals plug with fibre disk. Installs specified dies and adjusts table of crimping press, according to diameter and length of caps being crimped. Places plates of caps on table under dies, starts machine and depresses foot pedal to lower crimping device onto caps to crimp them. Lubricates and adjusts machines. Records data such as quantity of caps assembled, caps rejected and formula used.

May inspect crimped caps by measuring indentations and depth of crimp, using gauges.

8599-130 DETONATOR-AND-FUSE ASSEMBLER(explosives) DPT:684

GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Loads and assembles detonators and fuses used in high explosive shells or bombs, by performing any combination of the following duties:

Loads detonators with explosives, using calibrated scoop, or stands behind safety shield and operates loading machine by remote control. Loads fuse holder with explosive pellets and tamps them into place, using pneumatic press. Crimps delay elements in detonator casings to produce delay detonators, using hand crimping tool. Operates crimping machine to seal ends of detonators with metallic disks such as aluminum or copper. Installs specified components, such as loaded detonators, plungers and activating mechanisms to complete fuse assembly, using power tools and press. Inspects completed fuse and detonator assemblies for conformance to specifications, using special gauges. Tags or labels inspected assemblies according to established procedures and packs them into boxes for shipment or storage.

May perform a specific assembly function and be designated accordingly; for example,

Delay-Action-Fuse Assembler
Delay-Detonator Assembler

8599-134 FLARE ASSEMBLER(explosives) DPT:684

GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Assembles flares, by performing any combination of the following duties:

Weighs and mixes liquid priming mixture according to work order, using scale and mixing bowl. Rolls charge board containing vertical unprimed flares along conveyor to work station. Fills top holes in flares with priming mixture, using syringe, and presses filling hole closed with fingers. Turns flares over on charge board and installs wooden base plug, using hammer, or inserts and glues spiked plug according to specifications. Fills priming hole near base plug with priming mixture, using syringe, and presses filling hole closed with fingers. Applies sealing compound to upper and lower priming holes, using brush. Drills or punches holes in caps for insertion of fuses, using hand tools. Installs fuses in caps and secures caps to flares, using twine and glue. Stencils identifying information, such as type of flare, date of manufacture, or lot number on flares, and packs them in cartons for storage or shipment.

May charge and assemble railway track signals.

8599-138 IGNITER-AND-PRIMER ASSEMBLER(explosives) DPT:684

GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Loads and assembles primer cups or igniters used in small or large bore ammunition or flares, by performing any combination of the following duties:

Receives trays of partially charged upper and lower primer cup sections from other workers. Loads specified amount of primer compound into each section, using calibrated scoop and spatula. Fits primer cup dowel and pin holes together and places primer tray into clamp assembly of punch-press bed. Tends punch press that presses and locks primer cup sections together. Places tray of primer cups on lacquering press and pulls lever to operate press that deposits drop of lacquer onto each cup to seal two mating surfaces. Positions tray of sealed cups on seating machine and clamps tray in place. Stands behind safety glass and operates controls to insert primer cups into shell casings. Assembles flare igniters to specifications by soaking cloth in explosive compound and winding cloth on mandrel to air dry. Inserts igniters into flare canisters.

May fill small arms ammunition primer cups with dry priming mixture by operating remote controlled equipment.

8599-142 MUNITIONS ASSEMBLER(explosives) DPT:684
ammunition maker.

GED: 2 SVP: 3 EC: I 6 PA: M 4 7

Assembles and loads shells, bombs, rockets, mines and similar ammunition, by performing any combination of the following duties:

Weighs and loads propellant charges into cartridge cases or cloth bags, using hand scoop or loading machine. Weighs and loads explosive charges into shells (projectiles), bombs, rockets, mines and grenades, using hand scoop or loading machine. Screws fuses into place, by hand or using screw press. Places primers in cartridge cases and screws or crimps them in place, using press. Assembles shells to cartridge cases, using assembling and crimping machine. Brushes band of adhesive sealing compound around point of shell and cartridge. Assembles bombs, rockets and mines, by joining together components, such as body, tail assembly, detonators and boosters, using hand and power tools. Assembles and ties together propellant charge bags. Verifies dimensions of assembled ammunition, using fixed gauges. Stamps or stencils identification on ammunition. Packs ammunition in cardboard or metal tubes, sleeves or containers.

May disassemble ammunition to replace defective components or to recover propellant charge. May be designated according to specific task performed; for example,

Bomb Loader
Shell Assembler

8599-146 CARTRIDGE LOADER(explosives) DPT:685
loading-machine operator; loading-unit operator.

GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Tends machines that load small-arms cartridge cases with powder and bullets and crimp cases, by performing any combination of the following duties:

Places powder in hopper of dispensing unit. Inserts plate of cartridge cases under powder plate, slides powder hopper along powder plate and pulls lever to dump powder into cases, or clamps plate of cartridge cases over powder plate and inverts assembly to dump powder into cases. Taps dispensing plate with mallet to dislodge powder residue and removes plate. Visually inspects powder-filled cases to verify that all cases are filled. Positions plate of bullets over plate of cartridge cases and pulls bottom slide in bullet plate to drop bullets into cases or inserts bullets and cartridge cases in dial feed plates of machine. Positions cartridge plate on press and pushes lever to lower punches that seat bullets to specified depth in cartridge cases or observes automatic seating of bullets by machine. Inserts cartridge plate in crimping press to crimp cartridge cases around bullets. Removes plate from press and examines cartridges for defects, such as dented points, scratches, and loose bullets. Measures sample with fixed gauges to verify conformance to specifications.

May scoop bullets or cartridge cases onto specially holed plates and shake plate manually to cause cartridges or bullets to drop into holes. May fill special orders by loading a variety of small-arms cartridges, using hand-operated equipment and be designated accordingly; for example,

Loading-Unit Operator, Powder Charging
Loading-Unit Operator, Seating

8599-150 PELLET-PRESS TENDER(explosives) DPT:685

GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Tends press that forms pellets of explosives from mixed powder for use in charging bombs, flares, shells and signals:

Lubricates surfaces of table plate and bottom of feed chute of machine to prevent explosion hazards, using graphite-impregnated cloth. Aligns dies and punches of machine, using hand tools and gauges, and adjusts cogwheels to regulate punches to produce specified pellets. Fills machine hopper with powder from special container, using rubber funnel, and manually turns flywheel to make sample pellet. Weighs pellet on balance scale and measures its size, using micrometer. Readjusts machine, using hand tools, to produce pellets according to specifications. Stands behind safety shield and operates press, by remote control, to form pellets. Removes pellets from machine and inserts into charge board. Places board in pouch and carries to wall magazine to store until required for further processing.

8599-154 SHOTGUN-SHELL-ASSEMBLY-MACHINE

TENDER (explosives) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: M 3 4 7

Tends battery of automatic machines that assemble shotgun shells preparatory to loading with powder and shot: Fits hoppers with components to be assembled. Starts machines that form and press base wads into shell bodies, press metal heads onto bodies, and crimp heads to form extractor flanges. Observes machines for jams in hoppers and feed mechanisms and removes jammed components, by hand or using wire hook. Examines assembled shells for defects, such as open seams, damaged mouths, and malformed or tarnished heads. Removes defective shells, and stacks filled containers of assembled shells and rejects on truck for further processing. May record number of shells assembled, on time card. May align formed tubes for feeding into moving dial on hand-fed machines.

8599-158 SHOTGUN-SHELL-LOADING-MACHINE

TENDER(explosives) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: L 4 7

Tends battery of automatic machines that load shotgun shells: Starts machines and observes mechanisms for jams. Removes jammed shell components with fingers or using wire hook. Examines samples of completed shells at specified intervals to detect incomplete crimping, bulging wads, and blurred printing. Measures length, head thickness, and diameter, using fixed and adjustable gauges. Periodically stops flow of powder and wads, to ensure that automatic warning devices are functioning. Cleans powder, shot, and scrap from machines, using brush and vacuum cleaner. Records production data on time card, such as number of tubes filled and date and number of rejects. May cut shell open with knife and weigh powder and shot charge on grain scale to ensure charges are within specified limits and wads are correctly placed in shells. May make machine adjustments; such as, base-wad compression, head diameter, and feed stroke following work order and using hand tools. May fill shotgun shells with powder, pellets and wads by series of hand operations.

8599-162 RIM-FIRE PRIMING-MACHINE

TENDER(explosives) DPT:685
GED: 2 SVP: 3 EC: I 5 6 PA: L 4

Tends battery of automatic machines that charge rim-fire cartridge cases with priming mixture: Rubs priming mixture into holes in charger plate, using rubber hand tool. Positions plate in holding fixture of priming machine. Starts machine that punches pellets of priming powder into cases. Removes jammed cases from feed channels, using air hose or wire pick. Removes empty charging plate when machine stops.

8599-166 SHELL-CAVITY LINER(explosives) DPT:684

GED: 2 SVP: 2 EC: I 6 PA: M 4 7

Installs shell-cavity liners, loads supplementary explosive charges and prepares shells for shipment: Places metallic cavity liner in hole reamed in solid powder of shell by other workers. Operates hydraulic swaging tool to expand cavity liner into shell threads to form seal. Measures depth of cavity liner to verify conformance to specifications, using gauge. Loads supplementary powder pellet into shell cavity to form main detonating train. Installs fuse or metal plug to seal point of shell, using hand or power screwdriver. Packs shells in specified containers and prepares them for shipment, using hand tools or stapling machine.

8599-170 ANVIL-SEATING-PRESS TENDER(explosives)

cup-seating operator. DPT:685
GED: 2 SVP: 2 EC: I 5 6 PA: L 4 7

Tends power press that forces and seats primer anvils into loaded primer cups to form complete primers for delay caps or small arms cartridges: Aligns specially holed plate containing anvils over matching plate of loaded primer cups. Positions assembled plates in holding fixture, pulls lever to lock plates in place on feed table, and presses switch to start machine. Examines assemblies for malformations, discolourations and other defects.

May seat anvils, using hand-operated toggle press. May carry primer components from magazine and return assembled primers to magazine. May record production data on time card.

8599-172 POWDER-CUTTING TENDER(explosives) DPT:685

GED: 2 SVP: 2 EC: I 6 7 PA: H 4 7

Tends machine that cuts strands of propellant powder into grains of designated size to produce explosives having uniform ballistic properties: Starts cutting machine by flipping switch button, and feeds flexible strands of colloidal powder through guide holes into cutter. Starts flow of liquid coolant by opening valve. Plays liquid on cutting area to prevent outbreak of fire. Empties fibre containers of cut powder into cart. Checks quality of powder, noting clean cuts, location of pin hole, appearance of powder and length of cut. Reports to supervisor any deviation from standards or defective running of machine. Cleans equipment and work area, using brass tools, dust-pan and broom, for safety purposes and good housekeeping.

8599-174 PRIMER-INSERTING-MACHINE

TENDER(explosives) DPT:685
GED: 2 SVP: 2 EC: I 5 6 PA: L 4 7

Tends machine that inserts and seats primers in center fire cartridge cases and shotgun shells: Starts machine by pressing switch and feeds cartridge cases or shotgun shells onto pins of rotating dial plate. Observes flow of primers and cases through feed tracks to detect malfunction or jamming of mechanisms. Stops machine to remove jammed primers, shells or cases with fingers or wire hook. Examines primed shells or cases at ejection chute for defects such as dents or scratches, and measures them for conformance to specifications, using fixed gauges. May carry boxes of primers from magazine to work area for insertion in cartridges.

8599-178 WAXER(explosives)

DPT:685
GED: 2 SVP: 2 EC: I PA: M 3 4

Coats or impregnates empty cartridges, shotgun-shell tubes or shotgun-shell-filler wads with wax, by one of the following methods: 1. Weighs and dumps specified amount of wax into steam-heated barrel. Scoops cartridges or tubes into barrel and starts barrel tumbling to coat or impregnate articles with wax. Stops and empties barrel at end of prescribed time and examines articles for dents, gouges and other defects. 2. Turns valves and observes gauges to fill and heat tanks with liquid wax. Lowers baskets of cartridges or tubes into tank of molten wax, to coat or impregnate articles, using chain hoist. Removes articles from wax tank and immerses in cleaning tank to remove excess wax. Dumps waxed and cleaned articles into drums and transports drums to drying room, using handtruck. 3. Scoops wads into barrel and starts barrel tumbling to remove feathery edges. Stops and empties barrel at end of prescribed time and examines wads for smooth edges and specified thickness. Dumps acceptable wads into airveyor that transfers them to lubricator hopper. Turns valves to liquify wax and regulate flow over lubricating plate. Starts feeder plate to arrange wads and feed them between roller and lubricating plate that coats sides with wax. Verifies that correct amount of wax has been absorbed by periodically weighing impregnated wads and comparing weight against chart. May dump impregnated wads into tube-loading machine that inserts wads into shotgun shells. May be designated according to article waxed; for example, Cartridge Waterproofed, Wad Impregnator

8599-182 FOILING-MACHINE TENDER(explosives) DPT:685

GED: 2 SVP: 2 EC: I 5 6 PA: L 4 7

Tends automatic machine that punches out disks of foil and presses them over open end of loaded primer cups to seal out moisture: Positions and locks plate containing loaded primer cups in holding fixture on feed table. Loads machine with rolls of foil tape and presses switch to start machine. Removes plate when machine automatically stops. Examines sealed primer cups and removes defective ones from plate, using fingers, metal pick or wax-tipped stick.

8599-186 PRESSMAN, PYROTECHNICS(explosives)

DPT:685

GED: 2 SVP: 2 EC: 1 6 PA: M 4

Tends hydraulic press that compresses powder in cardboard tubes for use as pyrotechnic flares and signals, by either of the following methods:

1. Loads tubes into rack. Slides rack onto machine bed and locks into place. Pushes button to lower hollow punches over tubes that fill and tamp powder into tube bodies to a specified level. Removes rack from machine bed and carries tubes to other workers for subsequent processing. 2. Places tubes in press fixture that locks them in place. Pours specified amount of powder into each tube, using volumetric wooden scoop. Pulls lever or pushes button to force ram-heads into tubes to compress powder. Releases pressure and adds specified quantity of explosive powder to form igniting charge, using wooden scoop. Opens fixture and removes tubes.

8599-190 WATERPROOFER(explosives) varnishing-unit tender.

DPT:685

GED: 2 SVP: 2 EC: 1 5 6 7 PA: L 4 7

Varnishes or lacquers parts of cartridges or shotgun shells to form waterproof seal, by either of the following methods:

1. Tends semi-automatic machine that applies lacquer to base and mouth of cartridge cases to form waterproof seal around primer and bullet. Pulls lever to start machine and inserts cases into recesses in dial feedplate. Observes machine for malfunctions. 2. Positions varnishing plate over plate of cartridge cases and inverts to transfer cases to varnishing plate. Positions plate of cases in fixture of manual varnishing device. Moves levers to dip upper and lower blocks of pins into reservoirs of varnish, and then onto primers and into mouths of cases. Wipes excess varnish from cases with cloth and examines for completeness of coverage. Sets plate of cases on air-blown screen for drying.

8599-194 BOX FILLER, CHARGED PRIMERS(explosives)

DPT:687

GED: 2 SVP: 2 EC: 1 6 PA: S 4 7

Fills linen boxes with charged primers used in production of small-arms ammunition:

Pours chemical solution from pail into catch pan and places sieve tray of charged primers over catch pan. Agitates tray and rubs excess powder mixture from primers with gloved hand so that excess powder falls into chemical solution. Scoops primers from sieve by hand and pours them into linen box to specified level. Stamps identification data on lot ticket, using rubber stamp, and places ticket in box with primers. Empties catch pan into container of neutralizer, and wipes pan dry, using rag.

May inspect anvils in charged primers for conformance to standards by placing tray of primers under magnifying glass and removing defective primers, using tweezers.

**Musical Instrument Fabricating,
Assembling and Repairing Occupations, n.e.c.
8599-214 through 8599-286**

8599-214 HARPSICHORD BUILDER(misc. prod. fab., n.e.c.)

DPT:281

GED: 4 SVP: 8 EC: 1 PA: M 3 4 6 7

Lays out, machines, fits, assembles and finishes wood, metal and plastic parts to build harpsichords, according to drawings:

Measures and marks wood, metal and plastic components according to design specifications. Operates woodworking machines and uses hand tools to form wooden case parts. Sands and scrapes wooden parts and applies varnish or stain to finish surfaces. Fits and assembles parts, using hand tools, to assemble harpsichord case. Drills holes in frame for tuning pins, using template and drill press. Installs bridges on soundboard, using hand tools. Inserts tuning pins, and strings instrument, using various gauges of wire. Cuts and shapes wood, plastic and leather, using cutting machine and hand tools, to form parts of keyboards and actions. Fits, assembles and installs keyboard and action parts. Tunes instrument to specified pitch, using hand tools. Examines completed instrument visually and tactually, and corrects defects.

May apply decorative trim, such as stripes, decals or gilt, to finished instrument. May repair used instruments. May design harpsichords.

8599-218 MUSICAL-INSTRUMENT REPAIRMAN(ret. trade; whole. trade)

DPT:281

GED: 4 SVP: 8 EC: 1 PA: M 4 6 7

Repairs, cleans and refinishes a variety of musical instruments, by performing any combination of the following duties:

Inspects instrument, moves parts, or plays musical scale to determine defects. Disassembles instrument, using hand tools or gas torch. Solders, patches or replaces defective parts. Removes dents in brass instrument parts, using mallet or burnishing tool. Carves or cuts wooden replacement parts for instruments, such as guitars and violins, and fits and glues them into position. Restrings instruments. Retouches or refinishes wooden parts, using sander, stain, lacquer, brush, spray gun and buffer. Cleans accordion mechanisms and other instrument parts, using brush, solvent, cloth and oil. Replaces skin or plastic heads on drums or banjos. Tunes instruments as required, using tuning bar, tuning fork or stroboscope. Utilizes wide knowledge of musical instrument repair and does not specialize in the repair of any one type of instrument. Does not repair pianos or organs. May sell musical instruments and accessories.

8599-222 PIPE-ORGAN TUNER AND REPAIRMAN(misc.

prod. fab., n.e.c.)

DPT:261

GED: 4 SVP: 7 EC: 1 5 PA: M 3 4 6

Repairs, services and tunes pipe organs:

Directs assistant to depress specified organ console key. Strikes tuning fork and listens to tone differential. Adjusts pitch of organ pipe to conform with pitch of tuning fork, and adjusts pitch of remaining pipes by aural comparison to tuned pipe, by any combination of the following methods: 1. Raises or lowers tuning slides and stoppers of metal and wooden pipes, using tuning rod. 2. Rolls or unrolls curled strips of metal across tuning holes of metal pipes by hand. 3. Pinches or spreads metal lips that protrude from mouths of metal pipes. Cleans organ pipes, using vacuum cleaner. Repairs or replaces parts or organ; such as, pipes, console keys, stops, couplers, pedal boards, bellows and blower, using a variety of hand and power tools. Tests, adjusts or repairs electrical components, using test meters and hand tools.

May assist in the assembly and installation of new pipe organs in buildings, such as churches, concert halls and theatres.

8599-226 ACCORDION REPAIRMAN(ret. trade; whole.

trade)

DPT:281

GED: 4 SVP: 7 EC: 1 PA: M 4 6 7

Repairs, cleans and tunes accordions:

Disassembles instrument and parts; such as, bass and treble mechanisms, bellows, reed blocks, and manuals (keyboards), using hand tools. Moves parts and observes action to detect defects. Files, realigns, adjusts or replaces parts, using hand tools. Positions reed or reed block over orifice in test stand and activates hand or foot-operated bellows to sound reed. Aurally compares pitch of reed with master reed or tuning bar. Adds solder or files reed until pitch corresponds to master arbor. Replaces defective leather valves. Places reed in reed block and secures with glue or wax. Cleans parts and mechanisms, using brush, solvent, oil and cloth. Recovers bellows with sateen, cloth, or vinyl tape. Glues metal corners on bellows. Reassembles instrument and plays notes to determine accuracy of repair.

May tune reeds, using stroboscope. May operate woodworking machines to make wood replacement parts. May install microphone pickups on electronic accordions.

8599-230 PIANO REPAIRMAN(ret. trade; whole. trade)

DPT:281

piano technician.

GED: 4 SVP: 7 EC: 1 PA: M 3 4 7

Repairs pianos, using specialized tools and gauges:

Tests piano components, such as keyboard, soundboard, frame, pedal and action assemblies, using specialized hand tools and gauges. Levels keys by inserting paper and felt shims. Detaches action mechanism and replaces faulty, worn or broken parts, such as hammers, shanks, dampers, felts and joint connections. Aligns hammers and turns screws to adjust striking action of keys. Replaces strings and tuning

pins. Examines wooden parts for splits, warps and other defects. Repairs or replaces wooden parts, such as bridges and soundboard. May resurface and refinish wooden parts. May tune pianos, using tuning hammer, fork and felt picker, and be designated accordingly, Tuner-Technician

8599-234 PIPE-ORGAN BUILDER(misc. prod. fab., n.e.c.)
DPT:281
GED: 4 SVP: 7 EC: I 5 PA: H 3 4 7

Fabricates and assembles components of electro-pneumatic pipe organs:
Plans layout of organ following drawings, sketches of installation site and customer specifications. Cuts, shapes, fits and assembles wooden components, such as console, wind chest and wooden pipes, using variety of woodworking machines and hand tools. Assembles and installs electrical parts in organ components. Solders connecting wires to leads, using soldering iron. Examines and tests components prior to dismantling and shipping to installation site, using test meter. May be concerned with the fabrication and assembly of a particular component and be designated accordingly; for example,
Bellows Maker
Chest Assembler and Finisher
Frame Maker
Pipe Racker

8599-238 WIND-INSTRUMENT REPAIRMAN(ret. trade;
whole. trade)
DPT:281
GED: 4 SVP: 7 EC: I PA: M 4 6 7

Repairs, cleans and refinishes brass, reed and woodwind musical instruments, by performing any combination of the following duties:
Examines instrument, moves parts or plays musical scale to determine defects. Removes parts, such as rod pins, keys and pistons, using hand tools and gas torch. Reshapes parts and removes dents, using hand tools, mallet and burnishing tool. Fills cracks in wood instruments by inserting pinning wire across crack and covering wire with filler, or by using lathe to cut groove around crack, and clamping retaining band into groove. Solders patches over cracks in brass instruments, using silver or soft solder. Operates lathe to cut off end of metal tubing, or solders attachments onto tubing, to improve instrument's tone or intonation. Washes parts in stripping solutions to remove lacquer coating and tarnish. Polishes instruments, using polishing compound and buffing wheel. Electroplates metal parts or sprays on lacquer to refinish surfaces. Hand laps valves and pistons so they move freely. Heats key cups to melt shellac and remove pads. Glues new pads and cork pieces on key cups, using shellac. Bends and cuts replacement springs, and fits them into place.
May replace or repair plastic components of instruments. May specialize in repair of one type of wind instrument and be designated accordingly; for example,
Brass-Instrument Repairman
Woodwind-Instrument Repairman

8599-242 ORGAN-PIPE VOICER(misc. prod. fab., n.e.c.)
DPT:381
voicer.
GED: 4 SVP: 7 EC: I 5 PA: M 3 4 6

Adjusts metal and wood organ pipes to obtain specified timbre and strength of sound:
Inserts unvoiced pipes manually in rack of tubing table and starts electric blower. Depresses key to force air through voiced master pipe and unvoiced pipe. Listens to tone difference and determines adjustment required on unvoiced pipe. Raises or lowers lips of metal flue pipes to regulate airflow over lips. Notches languet (inner tongue), using hand tools. Files and adjusts reeds in reed pipes. Scrapes and sands lips in wooden pipes, and raises or lowers them to regulate air flow. Turns air valve, or adjusts opening of toe hole at base of pipe, using hand tools, to regulate loudness of sound.
May perform final tuning and voicing of pipes in newly installed organs.

8599-246 PIPE-ORGAN ERECTOR(misc. prod. fab., n.e.c.)
DPT:381

pipe-organ installer.
GED: 4 SVP: 7 EC: I PA: H 2 3 4 7

Assembles and installs components of electro-pneumatic pipe organs at installation site, according to specifications:
Installs components, such as wind chests, console, blowers and air ducts, using hand and power tools. Wires components, such as wind chests and blowers, using soldering iron. Mounts pipes above wind chests in predetermined pattern, according to specifications. Secures pipes in wooden racks and fastens racks to chest, using dowels and screws.
May tune or voice organ pipes. May repair pipe organs.

8599-250 PIANO-TONE REGULATOR(misc. prod. fab., n.e.c.)
DPT:381
GED: 3 SVP: 6 EC: I PA: L 4 6 7

Regulates tone of pianos, on a production line, by compressing or loosening felt on piano hammers:
Depresses piano key and listens to tone. Compresses hammer felt using hot iron, or files felt, to brighten tone. Loosens felt, jabbing with picker, to soften tone. Ensures that each hammer, when striking piano string, produces a tone of uniform brightness and clarity, consistent with its neighbours.

8599-258 PERCUSSION-INSTRUMENT REPAIRMAN(ret.
trade; whole. trade)
DPT:381
GED: 3 SVP: 5 EC: I PA: M 4 6

Repairs percussion instruments, such as drums, cymbals and xylophones, by any combination of the following duties:
Examines or plays instrument to determine defects. Removes drum tension rods and screws by hand or using drum key. Lifts rim hoop from drum shell and replaces plastic or skin drumhead. Reclamps rim hoop onto drum shell. Tunes drums aurally by playing them and adjusting tension rods. Removes dents in timpani, using rubber mallet and block. Drills hole at inside end of crack in cymbal, gong, or similar instrument, to prevent advance of crack, using drill press or hand drill. Drills holes in cymbals and inserts rivets for sound effect. Repairs or replaces bass drum and timpani pedals and foot mechanisms. Replaces percussion instrument hardware; such as, tension rods, rim hoops, and xylophone and marimba bars, using hand tools. Assembles imported drums for display.
May sell drums and accessories.

8599-262 PIANO-ACTION REGULATOR(misc. prod. fab., n.e.c.)
DPT:381
GED: 3 SVP: 5 EC: I PA: L 4 7

Regulates piano actions after installation in piano:
Adjusts action parts to ensure proper operation, using hand tools, buffer, shims or bushings. Aligns actions to obtain specified clearance between components, using fixed gauge and hand tools. Levels, squares and spaces keys, using gauge, shims and hand tools. Depresses piano keys to verify operation of actions and makes adjustments to attain required performance.
May subject piano to pounding-machine test to verify operation of actions and keys.

8599-266 PIANO-BACK ASSEMBLER(misc. prod. fab., n.e.c.)
DPT:681
bellyman.
GED: 3 SVP: 5 EC: I 5 PA: H 4 7

Fits and assembles wood soundboard, cast metal plate, and wood bridges to wood frame to build back panel of piano:
Operates hydraulic gluing press to glue supporting ribs and bridges to soundboard and soundboard to frame. Tends chamfering machine that cuts notches in ribs. Varnishes soundboard and ribs, using brush. Measures and marks back panel, using ruler and calipers, or uses jig to position metal plate that holds strings. Secures plate to back panel, using clamps. Marks panel with punch, removes plate, and drills holes, using drill press. Planes bridges to specified height, using hand plane and templates. Locates and marks holes for bridge pins, using template and punch. Drills holes in bridges, using portable drill, and hammers pins into holes. Replaces metal plate and secures with bolts

and screws. Verifies alignment of plate with bridges, using templates. Inserts shims or removes wood from frame to level and align plate. Hammers wood bushings into tuning pin holes in plate, using hammer and punch. Sizes holes in bushings, using drill press or portable electric drill, and hammers pins into bushings.

8599-270 PIANO SUBASSEMBLER(misc. prod. fab., n.e.c.) DPT:684

GED: 3 SVP: 4 EC: 1 PA: M 3 4 7

Assembles piano parts, or fits and installs piano components into piano cases, performing any combination of the following tasks: Screws, bolts or glues piano parts together to form subassemblies, such as actions and keyboard. Installs components, such as actions and pedal board to piano back assembly, using hand tools, power tools or special assembly presses. Verifies alignment of parts, using straight-edge, ruler and gauges. Planes and files parts, or adds shims, to obtain required fit of components and specified performance of moving parts, using hand plane and file. May machine parts, using machine tools, such as drill press, circular saw or other machine tools.

8599-272 PIANO TUNER(misc. prod. fab., n.e.c.; ret. trade; whole. trade) DPT:684

GED: 3 SVP: 4 EC: 1 PA: L 4 6

Tunes pianos on a production line, in homes, or public establishments: Removes cover from piano to expose strings. Places strips of felt between strings nearest one to be tested to mute them. Strikes note and compares pitch with that of standard tuning fork. Turns tuning pin with tuning hammer to adjust tension on string until pitch of string and that of tuning fork correspond. Tunes remaining strings, by aural comparison to tuned string. May repair and refinish pianos.

8599-274 BASS-STRING WINDER(misc. prod. fab., n.e.c.) DPT:682

string-winding-machine operator.

GED: 2 SVP: 4 EC: 1 S PA: M 4 7

Operates lathe-type winding machine to wind covering wire over core wire to make piano bass-strings: Places spools of covering wire on spool holder. Takes length of core wire, places looped end of wire over hook at one end of machine, and inserts other end of wire in machine chuck. Selects covering wire of specified gauge, unwinds end from spool and twists around starting point on core wire. Engages clutch to start machine and guides covering wire along rotating core. Stops machine when finishing point is reached, breaks covering wire by hand, and secures end to core by twisting. Winds more than one strand of covering wire over core when heavier strings are required. Opens chuck and removes wound string from machine. May form looped ends on core wires prior to winding operation, using twisting machine. May swage or flatten starting and finishing points on core wires, using flattening machine.

8599-278 ROUGH TUNER(misc. prod. fab., n.e.c.) DPT:684

chip tuner.

GED: 2 SVP: 4 EC: 1 PA: M 4 6

Adjusts piano strings to attain specified pitch, in first tuning of partially finished or finished pianos: Rubs strings to remove kinks and other irregularities, using wood block. Plucks specified 'C' or 'A' string, using pick. Adjusts tuning pin until pitch of string and standard tuning fork or bar are in unison, using tuning hammer. Plucks remaining strings and adjusts to specified pitch, by aurally comparing with previously tuned strings.

8599-282 BOW REHAIRER(ret. trade; whole. trade) DPT:684

GED: 2 SVP: 4 EC: 1 PA: S 4

Replaces bow hair of string-instrument bows: Disassembles bow and removes old hair, using hand tools. Examines and cleans bow parts. Hand carves replacement wedges and plugs. Selects new hairs and binds one end with yarn and resin. Inserts bound end in bow and secures with wedges. Combs hair and binds loose ends with yarn and resin. Secures other end in bow with wedges. Resins repaired bow, using resin bag.

8599-286 PIANO STRINGER(misc. prod. fab., n.e.c.)

DPT:684

GED: 2 SVP: 4 EC: 1 PA: M 4

Installs strings in pianos:

Selects specified wire and threads through hole in tuning pin and around hitch pin. Cuts wire with cutters and draws wire taut, using hand tool. Aligns and spaces strings, using hand tools.

May insert and hammer tuning pins into bushed holes in back panel, preparatory to stringing. May file steel bar to obtain proper fit for strings.

Sporting Goods Fabricating, Assembling and Repairing Occupations, n.e.c.

8599-306 through 8599-402

8599-306 BILLIARD AND BOWLING EQUIPMENT REPAIRMAN(sport. & toy) DPT:381

GED: 4 SVP: 7 EC: 1 S 7 PA: VH 3 4 7

Installs and repairs billiard tables and bowling alley equipment in commercial establishments, performing any combination of following duties:

Moves table components on rollers to erection site. Bolts legs of table to lower frame, using hand tools. Lifts and positions slates on frame in numbered sequence, assisted by other workers. Levels slates, using level and shim stock. Fits, tensions and tacks precut bed cloth in position. Bolts prefinished side rails and pockets to table. Lays out and marks billiard table cloth to specifications, using template, straight-edge, steel tape and pencil. Repairs damaged tables by replacing or repairing table parts, using hand tools. Moves bowling alley components on rollers to erection site. Assembles and levels alley sub-bed, using hand tools, level, transit and shims. Installs and bolts together precut and predrilled floor boards to form alley into solid unit. Sands alley surface, using floor sander. Performs final inspection of alley surface, using level and transit. Positions and glues plastic-foul-line markers into precut slots. Shellacs alley surface with specified number of coats, using shellacking machine. Installs accessories, such as prefabricated ball returns, gutters, ball racks, pit-back cushions, hydraulically-powered ball retarders and pin-setting mechanisms as required. Smooths and touches up pre-coated accessories, such as gutters, ball returns and racks. Repairs damaged or defective alleys by replacing or reconditioning alley units or accessories.

8599-310 ARCHERY-BOW REPAIRMAN(sport. & toy) DPT:381

GED: 3 SVP: 6 EC: 1 S 7 PA: M 4 7

Repairs damaged or defective archery bows by either of the following methods:

Removes varnish from damaged or defective areas of solid wood or solid fiberglass bow, using abrasive paper. Opens cracks in bow, using hand tools or by heating in oven. Fills cracks with wood filler or matching coloured glue. Places bow in oven to dry. Sands filler material flush with surrounding area, using abrasive paper. Removes damaged or defective fiberglass nocks, using knife and abrasive paper. Brushes adhesive on bow tips and aligns and secures nock blanks on tips. Shapes nock blanks to tips, using files and abrasive paper. Removes damaged or defective fiberglass from laminated bow, using knife and abrasive paper. Brushes adhesive on damaged or defective area and applies fiberglass strip of specified size and colour. Clamps bow in mould and places in oven to cure. Shapes repaired area and adjusts tiller (curve) of bow, using abrasive paper, files and sanding machine.

May refinish repaired bows. May customize bows to owner's specifications.

8599-314 GOLF-CLUB REPAIRMAN(sport. & toy) DPT:381

GED: 3 SVP: 6 EC: 1 PA: L 4 7

Repairs or customizes golf clubs by performing any combination of the following duties:

Repairs or replaces worn or damaged parts, or parts specified by customer, such as head, grip, shaft, sole plate or composition inlays, using adhesives, screws, rivets and hand tools. Rewraps part of head where shaft is inserted (hosel), with cord, using whipping machine. Replaces old grips by applying build-up material to handle area on shaft and wrapping with leather strip, or applies adhesive and slips

new rubber grip onto shaft. Removes or adds lead or brass inserts to achieve specified swing weight. Adjusts club heads to desired loft or lie, using hand or power tools. Stains, lacquers and buffs wooden heads, and polishes metal heads and shafts.

May make clubs to customer's specifications and be designated accordingly.

Golf-Club Maker, Custom

8599-318 ARCHERY-BOW MAKER(sport. & toy) DPT:381 bowyer.

GED: 3 SVP: 6 EC: 1 5 7 PA: L 4 7

Makes wood, plastic and laminated archery bows by performing any combination of the following duties:

Selects specified material from stock. Preshapes handles, limbs and other parts, using hand and power tools. Assembles parts to form bow, using specified adhesives. Clamps bow in mould, using 'C' clamps and positions mould in steam or electrically heated box to shape bow and cure adhesives. Trims and smooths bow, using hand tools and abrasive paper. Strings bow temporarily and pulls to full draw to determine if bow-limbs draw on parallel plane. Aligns limbs with handle, by adjusting position of string or by trimming limbs, using sander. Scribes lines for string grooves and bow-tips, using template. Cuts and finishes string grooves and tips, using abrasive wheel. Measures bow tiller (curve), using slide gruge. Removes stock from limbs to achieve specified tiller and to relieve stress, using sanding belt. Positions bow in slot of weighing scale and attaches pulley device to bow-string. Pulls stretcher cord to flex bow and records weight of pull. Polishes limbs to reduce weight of pull and scraps bows that do not meet specifications. Flexes bows past specified distance to test for failure of materials. Heats and straightens crooked limbs, manually. Polishes limbs to smooth finish, and chamfers edges, using hand tools.

May be concerned with a particular phase of bow making and be designated accordingly; for example,

Bow-Limb Aligner

Bow Tiller and Buffer

Bow Weigher

8599-322 BILLIARD-TABLE-CUSHION MOUNTER(sport. & toy) DPT:681

GED: 3 SVP: 5 EC: 1 PA: L 4 7

Attaches rubber cushions to billiard tables:

Glues and tacks rubber side and end cushions to wood mounting strip attached to rail of billiard table. Grinds chamfer on ends of cushions to facilitate installation of billiard table pockets, using belt sander. Glues wood support strip to back of cushions. Grinds entire length of cushions to precise specifications, to ensure correct billiard ball rebound, using belt sander.

May attach wood mounting strips to rails of billiard table. May cover billiard table cushions with cloth.

8599-326 GOLF-CLUB-HEAD FINISHER, IRON(sport. & toy) DPT:382

GED: 3 SVP: 5 EC: 1 5 6 PA: L 4 7

Operates one or more metal-working machines to shape and finish iron heads of golf clubs:

Clamps rough casting or iron head in vise. Forms and shapes iron head, using grinder and polisher. Installs head in holding fixture of stamping machine. Depresses button to operate machine that stamps golf club number, trade mark or brand name and face lines on iron head. Installs heads in fixtures of multiple-spindle drill press. Starts press that drills and taps shaft-insertion hole (hosel). Installs head in milling-machine fixture and mills back of head to specified contour, ensuring weight of club head is maintained within tolerances. Grinds and polishes head, using fine grit abrasive. Screws heads onto jigs of polishing mill. Operates mill that vibrates irons with tumblestones and polishing solution for specified time to impart fine finish to iron heads. Tapes ends of iron face and sandblasts centre of face to impart matt finish to assist ball grip. Cleans and buffs all contours of iron head, using buffing wheel. Brushes specified colour paint into stamped recesses of head and wipes paint off surface, using cloth.

May operate machine to decorate hosel. May nickel and chrome plate iron heads.

8599-330 SPORTING-GOODS REPAIRMAN(sport. & toy) DPT:684

GED: 3 SVP: 5 EC: 1 PA: L 4 7

Repairs a variety of sporting goods, such as fishing tackle, tennis racquets, golf clubs, archery outfits and ski equipment, by performing any combination of the following duties:

Examines article or work ticket to determine nature of defect or repair required. Restrings tennis, badminton or squash racquets with synthetic fibre or animal gut. Replaces defective parts of fishing tackle, such as reels, handles and rod sections, using a variety of hand tools. Replaces fishing line guides and line guide windings, using winding machine. Replaces points or feathers on arrow shafts, using adhesive or crimping machine. Rewinds thread on bows, strings or arrows, using winding machine. Replaces heads and grips on golf clubs. Fits new or replaces worn or damaged ski bindings. Repairs worn or damaged skis.

8599-334 BILLIARD-CUE WEIGHTER(sport. & toy) DPT:484

GED: 2 SVP: 5 EC: 1 5 7 PA: L 4 7

Weights, straightens and inspects billiard cues by performing any combination of the following duties:

Measures and trims length of cue, using inset scale and end chamfering machine. Drills butt of cue, using horizontally mounted drill press. Weighs cue on balance scale. Pours molten lead into drilled hole or selects and taps cylindrical weight into hole to obtain specified cue weight. Taps dowel pin into hole to secure weight. Trims dowel pin flush with cue, using saw. Sights and rotates cue to determine if cue requires straightening. Straightens cue as required, using straightening rig. Inspects cues for conformance to specifications. Weighs finished cue and stamps weight on butt end, using dies and hammer. Packs cues in carton and marks carton with length, weight and style.

8599-338 ARCHERY-BOW FINISHER(sport. & toy) DPT:684

GED: 2 SVP: 4 EC: 1 5 7 PA: L 4 7

Shapes and smooths final contours of archery bow handles and tips: Clamps workpiece in vise. Shapes final contour of bow handle, arrow rest or tips according to model or work order specifications, using hand and power tools. Removes tool marks from flat surfaces, using scraper. Shapes bow tip nocks, using round file. Smooths surfaces to final finish, using sander and abrasive paper.

8599-342 BILLIARD-TABLE SERVICEMAN(sport. & toy) DPT:684

GED: 3 SVP: 3 EC: 1 PA: L 3 4 7

Repairs billiard tables in commercial and private establishments:

Dismantles damaged table, using hand tools. Replaces damaged parts such as cushions, table top or cloth covering, using hand tools, tacks and cement. Repairs parts, such as table pockets and cloth covering, using needle and thread. Assembles and levels new tables in private establishments, using hand tools.

8599-346 GOLF-CLUB WEIGHTER(sport. & toy) DPT:484

GED: 2 SVP: 2 EC: 1 6 PA: L 4 7

Inserts weights in wooden golf-club heads to obtain specified swing weight:

Weights head on balance scale to determine weight to be added to obtain specified swing weight. Clamps head in drill press holding fixture and drills hole in designated position to required depth. Ladles molten lead, or selects and screws cylindrical metal weight, into hole to obtain desired swing weight.

May tend gas furnace to melt lead.

8599-350 GOLF-CLUB ASSEMBLER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 6 PA: L 4 7

Assembles golf clubs by performing one or more of the following assembly line duties:

Cuts golf-club shaft to specified length, using power saw. Drills head-securing-pin hole in shaft at designated position. Removes chrome finish from ends of shaft to prepare surfaces for cementing grip and head onto shaft, using abrasive paper. Slides decorative ferrules and collar onto shaft. Drills shaft-securing-pin hole in head at designated

position. Secures head in vise and injects adhesive into part of head where shaft is inserted (hosel). Inserts shaft into hosel and aligns shaft and head-securing-pin holes. Taps pin into hole to secure assembly. Brushes adhesive onto shaft above hosel and slides collar and ferrules into position. Grinds collar and ferrules flush with hosel, and brushes on lacquer to impart finished surface. Wraps hosel on wooden heads with cord, using whipping machine. Attaches grips either by applying build-up material to handle area and wrapping leather strip over material, or by brushing on adhesive and slipping rubber grip onto shaft. Cleans grip, collar and ferrules, using solvent. Polishes shafts, iron and wooden heads, using buffing wheel. May thread bottom end of metal shaft and screw into tapped hosel to provide assembly with additional strength.

8599-354 GOLF-CLUB-HEAD ADJUSTER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Adjusts loft and lie on golf-club irons: Reads work order to determine model and number of club and reads chart to determine required loft and lie angle. Inserts shaft into iron head and hangs it on large, vertically-mounted protractor to determine difference between the angle of the head being adjusted and the specified lie angle. Positions and secures lead-block former in vise. Places head on lead-block former and hammers head to open or close angles as required. Repeats operations until specified angle dimensions are achieved. Removes shaft from iron head.

8599-358 ARCHERY-BOW-STRING MAKER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 PA: L 4

Makes archery bow strings: Loops synthetic-fibre string around posts of jig and ties ends together. Applies wax to string manually. Holds one end of string and spins hand-winding device to twist string and form loops at both ends. Places string on post and winds bow string at loops and in centre with abrasive resistant thread, to reinforce and hold strands together.

8599-362 BASKETBALL COVERER(sport. & toy) DPT:684
inflated-ball coverer.

GED: 2 SVP: 2 EC: 1 PA: S 4 7

Applies leather panels to moulded basketball carcasses: Positions carcass (foundation structure) in holding fixture. Brushes adhesive on moulded carcass and examines wet adhesive for dried lumps and missed spaces. Aligns and applies leather panels between raised ribs on carcass and presses and smoothes panels, using hand roller. Cuts off air valve nipple flush with ball, using scissors or knife. May cover volleyball or soccer ball carcasses with leather or rubber panels. May repanel worn or damaged balls.

8599-366 FISHING-ROD ASSEMBLER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 PA: L 4

Assembles fishing rods preparatory to guide winding: Applies adhesive to specified positions on fishing rod blanks. Positions and presses parts, such as ferrules, rod tips, handles and reel seats onto rod blanks. Allows adhesive to dry and smoothes and removes excess, using abrasive paper. Clamps specified pattern board to work bench. Positions rod on or against pattern board and marks position of guides on rod, using crayon, paint or tape. May roughen part positions on rod blanks preparatory to gluing, using grinding wheel. May replace damaged or defective ferrules, rod tips, handles or reel seats.

8599-370 FISHING-ROD-GUIDE WINDER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 PA: S 4 7

Attaches line guides and applies decorative trim to fishing rods: Places spool of thread of specified colour and gauge on winding-machine holder and feeds thread through dispenser. Clamps fishing rod in holding fixture or rotating device. Depresses pedal to rotate rod, or to rotate thread dispenser around rod. Wraps rod for specified distance, moving thread guide as each wrap is completed, to control spacing. Holds or tapes guide in specified position and continues

wrapping until guide is bound to rod. Brushes wrapping with shellac to hold loose ends. May wind thread on golf clubs or on billiard cue handles for decorative purposes and be designated accordingly; for example, Billiard-Cue Winder Golf-Club Winder

8599-374 FLETCHER(sport. & toy) DPT:684
arrow featherer.

GED: 2 SVP: 2 EC: 1 PA: S 4 7

Secures feathers to arrow shafts: Positions and secures arrow shafts in fletching (feathering) jigs of rotating table. Inserts cut feather into fletching clamp, leaving edge of split quill exposed. Dips quill edge in glue. Positions fletching clamp in feathering jig to locate and glue feather onto shaft. Rotates table manually to next and subsequent stations and repeats operations until specified number of feathers are glued to each arrow shaft. Removes feathered arrows from fletching jigs and places them in cartons.

8599-378 RACQUET STRINGER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 PA: L 4 7

Strings tennis, badminton, and squash racquets with synthetic fibre or animal gut: Clamps racquet in stringing stand. Threads main strings through holes in bow. Clamps ends in jaws of tensioning device and depresses pedal to tighten string to specified tension. Inserts wedging awl into holes to lock string in position until next set of holes are strung or string is tied. Threads cross strings through holes in bow and weaves them through main strings. Tensions and secures cross strings, using tensioning device and wedging awl. Weaves coloured string (trebling) through gap in top of racquet above cross strings, and around bow, for decorative purposes. May restring damaged racquets.

8599-382 SNOWSHOE WEAVER(sport. & toy) DPT:684

GED: 2 SVP: 2 EC: 1 PA: M 4

Weaves strips of cowhide on wooden snowshoe frame: Places snowshoe frame in holding jig or between knees, preparatory to weaving. Threads thin strip of cowhide through holes in toe and heel sections to provide attachment points for heavier cowhide strips. Weaves heavier cowhide strips on frame to form toe, centre and heel sections of snowshoe. Knots, and cuts end of strips, using knife. Wraps frame and stress-bearing strips with cowhide to strengthen snowshoe. May lace lacrosse-stick frames with rawhide and be designated accordingly, Lacrosse-Stick Lacer

8599-386 BASEBALL-CENTRE WINDER(sport. & toy) DPT:685

GED: 2 SVP: 2 EC: 1 5 PA: L 4 7

Tends machine that winds thread or yarn around softball or hardball moulded centres: Positions centre in winding machine. Starts machine that winds thread or yarn around ball centre to specified size. Breaks winding material and ties loose end. Changes winding direction and repeats operation to obtain required circumference. Verifies size of centre, using gauge or tape measure and weighs ball on scale. Removes empty spools and rethreads machine as required.

8599-390 INFLATED-BALL MOULDER(sport. & toy) DPT:685

GED: 2 SVP: 2 EC: 1 PA: M 4 7

Tends moulding press to shape and cure volleyballs, soccer balls, basketballs and footballs: Positions uncured ball in bottom half of heated moulding press. Inserts inflating stem in valve plug of ball. Closes and locks mould and inflates ball to specified air pressure. Removes inflating stem and turns dial to set heating cycle. Inserts deflating stem through hole in mould and into valve of ball, on completion of heating cycle, and deflates ball. Opens mould, pulls out stem and removes ball. May tend moulding press to shape inflatable carcasses preparatory to covering.

8599-394 STUFFING-MACHINE TENDER(sport. & toy) DPT:685
GED: 2 SVP: 2 EC: 1 7 PA: L 4

Tends machine that inserts stuffing into toys and sporting equipment: Fills stuffing machine hopper with stuffing material. Installs specified nozzle on machine and places workpiece shell over nozzle. Depresses pedal to start machine that forces stuffing material into workpiece to obtain required firmness. Packs stuffed workpiece into box or carton and records production. May insert supporting wire or fibreglass strip into work piece shell prior to stuffing.

8599-398 ARROW ASSEMBLER(sport. & toy) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Assembles metal, wood and fibreglass arrows by performing any combination of the following duties:
Mixes adhesive, paint or lacquer according to specifications. Aligns arrows in rack and dips rack of arrow shafts into coloured adhesive. Presses and aligns nock manually over end of shaft and removes excess adhesive. Fits and secures metal point to tapered end of arrow, using adhesive or crimping machine. Spins arrow manually to ensure point and shaft are true and adjusts point as required. Records number of arrows processed.
May be concerned with a particular operation of arrow assembly and be designated accordingly; for example,
Arrow-Point Assembler
Nock Assembler
Racker

8599-402 FISHING-ROD FINISHER(sport. & toy) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Finishes fishing rods after assembly by performing any combination of the following duties:
Removes loose ends of line guide and decorated thread windings, using clippers and alcohol lamp. Aligns bound line guides along length of rod or rod sections, manually. Stamps model number on rod or rod section, using hand stamp and pad, and applies specified adhesive decals. Brushes protective coating onto thread windings. Places rod or rod sections in oven to cure coating. Matches sections of rods and crimps ferrules to ensure snug fit, using crimper. Inspects finished rods for defects and places them in plastic containers.
May package complete fishing outfits.

Broom, Brush and Mop Fabricating and Assembling Occupations, n.e.c. 8599-422 through 8599-470

8599-422 BRUSH-MAKING-MACHINE OPERATOR(misc. prod. fab., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: 1 5 PA: L 4

Operates machine that drills holes in brush base, and inserts and staples bristles into holes to form hair brushes, wire brushes and similar products:
Mounts roll of wire on machine spindle and threads wire through stapling mechanism. Fills magazine with material, such as horsehair, nylon, wire or plastic filaments, according to type of brush being made. Positions and clamps wooden or composition brush base in machine jig. Presses pedal to start machine that drills holes in blank base and inserts and staples bristles into holes. Adjusts machine to accommodate varying angles of holes in brush base. Holds brush over rotary trimmer or clipping machine to trim bristles, according to prescribed standards. Places finished brush on storage rack or into boxes.
May attach trim to brushes. May stain brushes. May operate machine that inserts and staples bristles into predrilled brush base and be designated accordingly,
Filling-and-Stapling-Machine Operator.

8599-426 ROTARY-BRUSH-MAKING-MACHINE OPERATOR(misc. prod. fab., n.e.c.) DPT:682
GED: 3 SVP: 4 EC: 1 6 PA: M 4 7

Operates machine that binds bristle material between wire cable and steel strip, and spiral-winds resulting flat brush strip on drum, to form brushes used on street-sweeping machines:
Loads reel of flat steel strip onto holder, and threads through machine. Mounts wire cable in machine, turns cranks to wind specified amount of cable onto holding spool, and staples end of cable to revolving drum onto which brush is spiral wound. Turns cranks and adjusts levers and bars, using hand tools, to set rates of feed and depth of trim of bristle material. Selects and weighs bristle material, and loads into machine feed slot. Sets spool brake to maintain tension between spool and revolving drum, using wrench. Aligns carriage-wheel guide in spiral groove of wire cable and adjusts material guides and conveyor to feed material onto drum, according to size of brush. Starts machine that forms wire cable, metal strip, and bristle material into flat brush strip, and spiral winds flat strip onto revolving drum to make rotary brushes. Shears brush strip at completion of winding process and trims bristle ends. Removes completed brush from winding machine, using small crane. Makes brushes used in car-wash equipment, by hammering and peening flat brush strips into slotted aluminum core, using air hammer.

8599-430 PAINT-BRUSH-HEAD MAKER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: 1 PA: S 4

Fills metal ferrules with hog bristles, horsehair, vegetable fibres or nylon, to make paint-brush heads preparatory to bonding and handle fitting:
Weights out specified amount of bristles, using balance scale, and inserts base end of bristles into ferrule. Separates bristles with metal blade, and inserts rubber or wooden wedge into bristles to press them against sides of ferrule, to form brush head. Strikes protruding bristles, using wooden paddle, to achieve uniformity of spread and depth of bristles. Combs bristles to remove kinks. Places brush head aside for epoxy bonding.

8599-434 BROOM WINDER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 6 PA: M 4 7

Wraps and fastens broomcorn fibres to broom handles with wire, preparatory to stitching:
Dips ends of fibres in water to render them pliable. Inserts and clamps broom handle in winder. Threads end of wire from reel through hole in handle and ties wire to handle. Places initial layers of fibre on handle and presses pedal to rotate handle to wrap wire around fibre. Spreads fibre around handle under wire as winder turns. Trims excess fibre from each layer, using knife. Hooks leather strap around body of broom to secure it while winding subsequent layers. Pounds fibres to pack and shape broom shoulders. Wraps and fastens wire around neck of broom handle, using stapler.
May fill plastic holding cups with setting compound and insert corn fibres, manually, to form brooms.

8599-438 BRUSH FINISHER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 7 PA: L 4 7

Finishes brushes by performing any combination of the following tasks:
Sands and polishes parts of brushes, using sanding wheel and buffer. Trims and shapes brush-filling material, according to prescribed standards, using trimming or clipping machine. Removes dust and loose filling material, using cleaning or combing machine. Hangs brushes on rack and applies lacquer to brush handles by dipping or spraying. Imprints or stamps identifying name on brush handles. Inspects brushes and repairs defects.
May pack finished articles for shipping.

8599-442 BRUSH MAKER, HAND(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4 7

Fills predrilled brush heads with hog bristles, horsehair, nylon, vegetable fibre or other materials by hand, to make brushes by either of the following methods:

1. Secures brush base in bench fixture. Selects appropriate amount of bristles required to form single tuft and wraps base end with twine. Dips base end of tuft into glue and inserts it into hole in brush base. Repeats process until all holes are filled. 2. Threads wire through hole in brush head. Loops end of wire around tuft of filling material, pulls material through hole in brush head, and ties wire to secure tuft. Repeats process until all holes are filled.

8599-446 BRUSH-MATERIAL PREPARER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I 3 6 PA: L 4

Prepares hog bristles, horsehair, nylon and other brush-filling materials, for use in brushes:

Opens cases of hog bristles, using hand tools. Aligns bristles to ensure that butt ends are together, and discards defective bristles. Ties bundle of bristles to prevent bending, using rubber bands, and places bundle in rack. Lowers rack of bundles into vat of boiling water to sterilize and remove curl of bristles. Removes rack after specified time and places on dolly to dry. Places bundles in cartons, and labels cartons according to length, origin, grade, and colour of contents. Prepares other brush-filling materials by straightening, combing, cutting, and tying them into bundles according to type of material and intended use. Trims and flags butt ends, and polishes material, using grinding machine.

8599-450 PAINT-BRUSH FINAL ASSEMBLER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4

Completes assembly of paint brushes, by performing any combination of the following duties:

Positions brush head under pouring nozzle of epoxy machine, and depresses pedal to pour epoxy into head, securing bristles in metal ferrule. Places brush head in tray to dry. Trims brush head bristles to specified length, using trimming machine. Forces brush handle into ferrule of brush head, using power press. Operates nailing machine that drives nails through ferrule and into brush handle to secure assembly.

May cut and form metal ferrules, using shear and forming jig. May be designated according to operation performed; for example, Epoxy-Pouring-Machine Operator

8599-454 TWISTED-WIRE-BRUSH MAKER(misc. prod. fab., n.e.c.) DPT:684
twisting-machine operator.
GED: 2 SVP: 3 EC: I 6 PA: L 4

Operates machine that twists wire around brush-filling material to make twisted-wire brushes:

Fastens specified chuck in twisting machine to accommodate diameter of wire used. Sets stops on machine bed at specified distance from chuck, using hand tools and rule, to stop twisting action when wire is twisted to required length. Selects specified size of precut looped wire and places looped end over hitching post on machine bed. Inserts straight ends of wire into machine chuck and depresses pedal or moves lever to tighten chuck. Weighs out specified amount of horsehair, nylon, vegetable fibres or other brush material, using scale, or feeds preweighed material into magazine of machine filling unit. Spreads or distributes material evenly between straight ends of wire. Depresses pedal or moves lever to start machine that twists wire around brush material. Removes finished brush from machine and places in storage bin or container.

8599-458 BROOM-STITCHING-MACHINE OPERATOR(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: I 6 PA: L 4

Operates machine that stitches twine through broom fibres to strengthen and shape body of broom:

Attaches specified ratchet to stitching machine, using wrench. Turns lever to set number, rows, and length of stitches. Installs and tightens broom holding jaws in vise. Positions and clamps brush end of broom in vise. Cuts specified length of twine, using knife. Wraps twine around broom, pulls one end between fibres, using hook, and threads other end through needle of stitching machine. Pushes vise into stitcher and depresses pedal to start machine that stitches twine through fibres.

May operate machine that bends and attaches heavy metal clamp to strengthen and form broom.

8599-462 MOP MAKER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: I PA: L 4

Assembles mop heads and attaches them to handles by one of the following methods:

1. Positions butt end of handle on tape sewn to strands of yarn. Wraps tape around handle and secures with nails. 2. Places spool of wire in holder and inserts mop handle into chuck of winding machine. Threads wire through hole in handle and positions yarn strands around handle. Starts machine that rotates handle and winds wire around yarn strands, securing yarn to handle. Drives nail into handle and twists wire around nail. 3. Glues precut sponge to metal backing plate and attaches assembly to mop holder to form mop head. Attaches mop head to handle, using hand or power tools.

8599-466 BROOMCORN DYER(misc. prod. fab., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: I 4 5 PA: M 4

Dyes broomcorn used in making brooms:

Turns valves to admit water into dye vat and pours specified amount of dyestuff into vat according to instructions. Starts conveyor and places bundles of broomcorn fibre on metal prongs of conveyor belt that immerses bundles of fibre in dye solution. Removes bundles of dyed fibres from conveyor and places on drain rack.

8599-470 PAINT-ROLLER-COVER TRIMMER(misc. prod. fab., n.e.c.) DPT:686
GED: 2 SVP: 2 EC: I 6 PA: L 4

Trims and bevels ends of paint roller covers to prevent lap streaks when painting:

Selects and positions specified mandrel vertically in trimming machine. Tightens screws by hand to secure mandrel. Fastens knife blade at proper angle at base of mandrel to trim paint roller cover at specified bevel. Presses button to start knife rotating. Slides cover down mandrel onto rotating knife to trim end of cover. Removes cover from mandrel and repeats operation to trim opposite end of cover.

May pack trimmed covers in cartons.

Zipper Fabricating and Assembling Occupations, n.e.c. 8599-490 through 8599-510

8599-490 ZIPPER-CHAIN-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 4 EC: I 5 PA: M 4 7

Tends battery of automatic machines that cut metal-slide-fastener links from wire and crimp them onto beaded edge of tape to form side of zipper chains:

Mounts coil of wire on machine and threads beaded tape and wire through guides, automatic-feeder mechanism and into forming dies. Turns set-screws to adjust die jaws for height of lug, using wrenches. Starts machine and observes operation to detect malfunctioning. Verifies fastener dimensions; such as, length, width, spacing, and height of lug, using rule and micrometer. Examines finished product for defects, using eye loupe.

May tend automatic hopper-loaded machines that attach preformed scoops to tape.

8599-494 ZIPPER-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
slide-fastener-machine tender.
GED: 2 SVP: 3 EC: I 3 5 PA: L 4 7

Tends automatic machine that deburrs, irons, paints, dries and wax-coats chains of zippers:

Threads ends of continuous chain through guides, rollers, spray and heating chambers, brushes and counter. Adjusts tension, pressure and spraying or heating action by turning nuts, screws, valves and wheels, using hand tools. Starts and observes operation of machine that automatically deburrs metal scoops beneath rotating wire brushes,

closes fastener by meshing scoops of both stringers in closing device, rolls chain to uniform thickness, steams and presses tape to remove wrinkles, prints directional arrow on edge of tape, brushes or sprays chain with lacquer or enamel and wax to waterproof and improve appearance, counts and measures scoops and chain, and inspects chain electronically for defects. Replenishes and changes reservoirs with lacquer or enamel and wax, according to specified colour. May tend machine that removes wrinkles and coats chain of nylon zipper with waterproof wax.

8599-498 ZIPPER-CUTTING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: 1 5 PA: L 4

Cuts zipper chains into specified lengths, by either of the following methods:

1. Measures chain against machine-mounted ruler to determine number of scoops to remove to shorten zipper to specified length. Positions chain under die of press and presses pedal to lower cutter. Rubs cut scoops against edge of press to remove them from tape. Examines zipper for broken or missing scoops and discards defective zippers. 2. Threads end of strip through machine guides and under blade and punch. Adjusts stop on calibrated scale according to specified length of zipper and adjusts end of strip with stop. Depresses pedal that lowers blade and punch onto strip to cut zippers and remove excess links from end of zipper, for attachment of stops. Examines zippers for short or long ends, malformed scoops, and other defects.

May tend machine that also serrates tape ends and be designated accordingly,
Zipper-Pinking-Machine Tender

8599-502 SLIDER ASSEMBLER(misc. prod. fab., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: 1 PA: L 4

Attaches slides and bottom stoppers to zippers:

Clamps slide in holding device on work table, and threads bottom-end links of zipper chains through slide. Grasps end of zipper and pulls chain through slide, meshing the links to close zipper. Removes slide from holding device and positions zipper on machine bed with zipper bottom against guide. Depresses pedal that lowers pneumatically-operated-machine-head to fasten metal clamp or staple around bottom of chains.

May depress pedal that causes rollers to grasp end of chain and close zipper, by pulling it through machine.

8599-506 ZIPPER FINISHER, HAND(misc. prod. fab., n.e.c.) DPT:687
slide-fastener finisher.
GED: 2 SVP: 2 EC: 1 PA: S 4

Trims zippers to length and salvages repairable zippers:

Measures chain against bench-mounted ruler to determine number of scoops to remove according to specified length. Cuts each scoop from tape, using pincers. Cuts tape between chains to separate into individual zippers, using scissors. Examines defective zippers to determine if repairable and method of repair. Counts and records number of rejected zippers.

8599-510 ZIPPER-STOP ATTACHER(misc. prod. fab., n.e.c.) DPT:687
GED: 2 SVP: 2 EC: 1 5 PA: S 4

Attaches metal stops to zipper-stringer chains:

Fills hopper of press with zipper stops. Inserts stringer between press jaws and depresses pedal to drive prongs of stop through tape. Pulls chain through dies to machine stop to position stringer for next stroke. Removes jammed or defective stops from feeder tube or hopper, using metal pick or tweezers.

Ophthalmic Goods Fabricating and
Assembling Occupations, n.e.c.
8599-530 through 8599-538

8599-530 LENS MOUNTER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 4 EC: 1 PA: S 4 7

Inserts eyeglass lenses into plastic or metal frames, and adjusts frames by performing any combination of the following duties:

Selects frame according to size and shape of lenses and prescription specifications. Heats plastic frame in hot glass beads or over heated cone to soften and expand eye-pieces. Snaps lenses into eye-pieces with fingers. Shapes bridge of frame to specified contour, over heated cone. Allows frames to air-cool or immerses them in ice-water, to contract frame and set plastic. Bends eye-wire to approximate curve of lenses with fingers. Places lens in eye-wire and shapes frame to seat lens in grooves. Tightens eye-wire screws to secure lenses, using jewelers' screwdriver. Verifies measurements of frames, using gauges. Attaches and adjusts temple pieces and nose pads, using screwdriver and pliers. Cleans and polishes frame, using buffing machine.

May tend electric-oven which hardens lenses used in safety eyeglasses. May assemble safety eyeglasses, using standard size lenses and frames.

8599-534 MULTIFOCAL-LENS ASSEMBLER(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: S 4 7

Assembles and prepares multifocal lenses for fusing, by performing any combination of the following duties:

Stamps identifying code on back of counter-sunk lens-blanks. Selects tray of matching multifocal buttons. Dips buttons and blanks in cleaning solution and wipes them dry. Brushes parts to remove dust and lint. Positions button on polished surface of countersunk blank. Performs Newton's Ring test to detect foreign matter between surface of button and blank as indicated by wavy rings when pressure is applied to outside edge of button. Wipes surfaces and performs test until rings remain free of waves. Dips metal pegs or pins in cement, and inserts between button and blank with tweezers to allow air to escape during fusing, and to hold button in place. Places assembled unit on tray.

May use spring clamp to hold button in position on blank. May load trays of assembled units onto conveyor of furnace that fuses multifocal-lens parts. May assemble multifocal-button parts and secure with asbestos strips prior to fusing and be designated accordingly,
Multifocal-Button Assembler

8599-538 ASSEMBLER, EYEGLASS FRAMES(scient. & ind. equip., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Assembles plastic or metal eyeglass frames, by performing any combination of the following duties:

Places parts in machine fixture. Depresses pedal or moves lever to start and stop machine that cuts, drills, slots, pierces or bevels parts. Places plastic eyeglass bridge-frame or temple piece in oven to soften it. Shapes heated part to specified curve and contour, using jig press. Inserts heated temple piece into machine and pulls levers to imbed reinforcing wire longitudinally into temple. Assembles parts; such as, bridge-frame, temple piece, clips, hinges and nose pads, to form complete eyeglass frame, using hand tools, power tools, rivet press or brazing equipment. Embosses identifying information on frame, using embossing press.

Wig Making and Hairwork Occupations, n.e.c.
8599-558 through 8599-574

8599-558 WIG MAKER, HAND(misc. prod. fab., n.e.c.) DPT:681
GED: 3 SVP: 5 EC: 1 PA: S 4 7

Makes wigs by hand, to customer specifications, performing any combination of the following duties:

Draws and cuts out pattern of hairpiece according to customer's head measurements or draws pattern directly on model head. Draws lines on model head with crayon to indicate position of foundation. Stretches and pins or tacks wet lace or gauze over foundation area. Cuts, pins and sews ribbon around outer edge of lace or gauze to bind foundation. Inserts metal stays and elastic into ribbon to hold wig in place on head. Fits and sews netting to lace or gauze to complete foundation. Trims ragged edges and protruding threads, using

scissors. Positions selected hair for wig between cards that are equipped with rows of wire teeth to prevent tangling. Pulls several strands each time, through teeth of cards and cuts ends with scissors to make strands even and eliminate split ends. Forms loops in ends of strands. Inserts strands of hair through holes of foundation, using ventilating needle, and brings ends through loop, to knot and fasten hair securely. Combs out hair when wig is finished.

May work on particular phase of wig making and be designated accordingly.

Wig-Foundation Maker

8599-562 MANNEQUIN-WIG MAKER(misc. prod. fab., n.e.c.)
DPT:684

GED: 3 SVP: 5 EC: I 7 PA: S 4 7

Makes mannequin wigs of synthetic fibre according to style specifications:

Selects appropriate model head. Places layer of cellophane or wax paper over model. Molds sheet of wet buckram over paper to form wig foundation. Places model head in drying chamber. Trims dried buckram to shape using scissors. Selects strands of synthetic fibre, and combs, cuts and blends them according to length and colour. Folds ends of strands and cements short side of fold to foundation. Pins tape over cemented section to secure hair in position, on foundation. Styles hair, using tape, pins, comb and curling rollers. Dries wig under electric drier and sprays with lacquer to set style.

8599-566 WIG-HAIR PREPARER(misc. prod. fab., n.e.c.)
DPT:684

GED: 3 SVP: 4 EC: I PA: L 4 7

Selects, matches and dyes hair for wigs and hairpieces:

Combs hair to be used as stock for wigs and hairpieces by passing it through teeth of stationary metal comb to remove tangles. Separates hair according to length, colour and texture and washes it with shampoo and water. Dries hair in oven or with warm air blower unit. Compares sample of customer's hair with hair in stock. Selects and combs strands to blend variations in colour to match sample. Ties hair with string to facilitate handling. Mixes dyes and bleaches by hand, according to formula. Dips strands in solution to obtain required colour and dries hair in oven. Attaches sample and selected hair to customer's order for wigmaker.

8599-570 ROOTING-MACHINE OPERATOR(misc. prod. fab., n.e.c.)
DPT:684
GED: 2 SVP: 3 EC: I PA: S 4

Operates machine that automatically attaches prescribed quantity of hair to doll head:

Places one or more cones of precurled synthetic hair at rear of machine. Pulls single strand of hair from cone. Threads needle with hair and positions doll head on machine post. Depresses pedal to activate needle and manoeuvres doll head under needle in prescribed pattern until machine stops at end of rooting cycle. Releases pedal to activate device that cuts strand at specified length from doll's head. Places doll's head in containers for removal to finishing department.

May tend machine equipped with more than one needle. May set hair, using brush, comb and water.

8599-574 DOLL-HAIR STYLIST(sport. & toy)
DPT:684
GED: 2 SVP: 2 EC: I 7 PA: S 4 7

Styles doll hair to specifications:

Places doll head on stand. Smoothes and untangles hair, using brush and comb. Sprays on hair setting solution or water. Cuts and sets hair to specified style. Removes smudges from doll face, using damp cloth. Covers doll head with plastic bag to prevent damage to hair and face.

Miscellaneous Product Fabricating Occupations, n.e.c.

8599-594 through 8599-674

8599-594 ASSEMBLY-LINE EXPEDITER(any ind.) DPT:364
utility man, line assembly.

GED: 3 SVP: 5 EC: I 5 6 PA: M 4 5 6 7

Expedites flow of material and assists workers, on assembly line of manufacturing establishment, to improve efficiency and production:

Determines conditions impeding flow of work on assembly line and notifies foreman of defective tools, equipment and material, or other conditions which hinder assembly process. Ensures that each assembly station has sufficient material and notifies materials-handling personnel or foreman of impending shortages. Serves, temporarily, as assembler in work-congested areas. Instructs new workers by demonstrating new or changed operations. Substitutes for workers at moving line-assembly operation, so they may temporarily leave work station without interfering with production.

May inspect assembled products and initiate necessary changes to ensure product is assembled to manufacturer's specifications.

8599-598 INSULATION-BLANKET MAKER(asbestos & min. wool)
DPT:684

GED: 3 SVP: 5 EC: I 7 PA: M 4 7

Fabricates heat retention or heat protection blankets to cover equipment, such as boilers, tanks and turbines, performing any combination of the following duties:

Lays out asbestos cloth or wire-mesh according to pattern, template or dimensions. Cuts casing material, using scissors or tin snips. Sews edges of material to make blanket casing, using fine wire, thread or cord. Fills casing to specified thickness with insulating materials; such as, rock wool, asbestos, cork or fibreglass. Threads wire through evenly spaced blanket hooks or sews blanket with thread or wire to hold insulation in place.

May install and fasten blankets or casings in position on turbines, using clamps or fine wire. May fabricate pipe insulation from foam plastic blocks, using power saws, and overwrap insulation slab with cloth, kraft paper or foil. May fabricate heat insulation blankets for aircraft jet engines from wire screens and insulation materials, using spot-welder and hand tools. May be designated according to material used or product fabricated; for example,

Asbestos-Blanket Maker

Heat-Shield Maker, Aircraft

Pipe-Insulation Fabricator

8599-602 ORNAMENTAL-DESIGN CASTER(misc. prod. fab., n.e.c.)
DPT:684

compo. caster.

GED: 3 SVP: 5 EC: I PA: L 4 7

Compounds and casts ornamental putty into designs, and attaches them to picture mouldings:

Measures out, heats and mixes glue, resin, whiting, linseed oil and water into pot to make putty according to formula. Casts moulded putty forms by either of the following methods: 1. Stirs, kneads and shapes putty into loaf, manually. Places loaf in mould. Clamps board over filled mould, places in press and activates press by pulling handle. Removes casting, trims design, and places on table to harden. Dips hardened ornament in water and lays it in place on blank picture moulding. 2. Installs specified die roller in hand press and adjusts die, guides, and scrapers, using hand tools. Loads putty into feed hopper and turns handle of press to produce moulded forms. Places picture moulding on feed roller and observes feeding, shaping and attaching of putty to moulding.

8599-606 REFLECTIVE-SIGN FABRICATOR(misc. prod. fab., n.e.c.)
DPT:684

GED: 3 SVP: 5 EC: I PA: M 4 7

Applies adhesive luminous coating on metal plates, and paints lettering and designs on plates to produce reflective signs, using either of the following methods:

1. Places backing plate on bed of machine. Cuts required amount of adhesive material from roll, using shears, and positions it on plate, adhesive side down. Positions heated vacuum head over plate and activates machine to press and bake for specified time. Raises head and removes plate. Paints lettering and designs on sign backing by hand or using silk-screen imprinting device. 2. Mounts roll of adhesive material on machine spindle and feeds material through pressure rollers and machine guides. Starts machine and feeds metal backing plate between feed rollers that apply adhesive material to plate. Paints

lettering and designs on sign backing by hand or using silk-screen printing device.
May apply adhesive luminous-coated letters to sign backing, using hand roller.

8599-610 EMBOSSEER OPERATOR(paper prod.; textile)

DPT:682

GED: 3 SVP: 4 EC: I 5 PA: M 4

Operates machine that embosses designs on textiles or paper to produce, such items as lace-paper doilies and place mats:
Positions rolls of paper or fabric around shaft of machine, using hoist. Secures dies and cutters on machine, or embossing disks on embossing rollers, and fastens collars on shafts to secure rolls, using hand tools. Threads material through rollers and around cutters, manually, and turns handwheels to adjust feed guides, tension and pressure on feed rolls. Presses button to start machine, observes feeding, embossing, piercing and cutting of material, and makes necessary adjustments before starting production run.
May turn valve, regulating flow of steam into rolls to counteract paper curling and obtain desired depth of embossing and surface shine on material. May print place mats on embossing unit. May clean machine parts with solvent.

8599-614 SIZING-MACHINE OPERATOR(non-metal. min. prod., n.e.c.)

DPT:682

GED: 3 SVP: 4 EC: I 7 PA: L 4 7

Operates machine to apply adhesives to abrasive-coated paper or fabric:
Mounts rubber take-up roll on machine spindles, using hand tools. Fills glue reservoir. Controls conveyor speed and roll tension in accordance with delivery rates from abrasive-coating machine, and regulates thickness of adhesive coating applied onto base material. Coordinates speed of machine with material delivery, to prevent stoppages.
May adjust controls to regulate temperature of pre-cure oven, depending upon type of adhesive used in previous production stage. May start conveyor which carries material away from machine.

8599-618 PICTURE FRAMER(misc. prod. fab., n.e.c.)

DPT:684

GED: 3 SVP: 4 EC: I PA: L 4 7

Frames pictures by performing any combination of the following duties:
Fabricates custom frame, or requisitions standard frame from stock. Mounts picture on backing, using glue. Measures and cuts mounted picture to fit frame, using papercutter. Cuts materials, such as fabric or paper, to form bordering mat of specified size and width, using hand tools. Cuts glass to fit frame, using glass-cutter. Cleans glass and places it in frame. Places picture on glass. Cuts cardboard to fit frame and places it on back of picture. Fastens cardboard back to frame with staples or brads to hold picture in place. Glues paper cover to back of frame. Attaches eyelets and hanging wire to frame, using hand tools. May frame oil paintings or tapestries. May frame pictures without glass.

8599-622 ABRASIVE-BELT JOINER(non-metal. min. prod., n.e.c.)

DPT:682

belt-press operator.

GED: 2 SVP: 4 EC: I 6 PA: M 4

Operates hydraulic press to join and cure ends of abrasive belts used on sanding machines:
Reads work order to determine specifications, and mixes adhesives according to instructions. Sets controls on hydraulic press for pressure, temperature and curing time specified. Takes length of abrasive belt, spreads adhesive on prepared ends, using brush, and overlaps ends to form endless belt. Places belt in hydraulic press and moves controls to close press. Removes belt from press at end of curing cycle and places on rack or nests on floor.
May set belt ends in cold press before curing in hot press.

8599-626 AWNING MAKER, CANVAS(garment & fabric)

DPT:684

awning framer and rigger.

GED: 3 SVP: 3 EC: I PA: M 4 7

Fabricates canvas awnings by performing any combination of the following duties:

Pulls canvas from bolt and cuts to specified length, using hand shears. Cuts canvas to shape following pattern, and operates sewing machine to join parts. Selects specified metal for frame and marks cutting and bending locations, using tape measure and marker. Secures metal in vice to cut it to length, to thread ends and bend to specified angle, using hand cutting, threading and bending tools. Assembles frame by screwing and bolting metal frame parts together with hand tools. Installs grommets in awning cover, using grommet machine. Inserts frame into pockets of awning cover and secures, using needle and thread. Sews rings and snaps on awning cover. Selects pulleys, and measures and cuts rope for installation according to specifications. Folds, ties and bundles finished awnings.
May fabricate awnings, using vinyl or rubberized fabric.

8599-630 CHALK-BOARD-AND-BULLETIN-BOARD

FABRICATOR(misc. prod. fab., n.e.c.) DPT:684

blackboard maker.

GED: 3 SVP: 3 EC: I PA: M 4

Fabricates and partially assembles component parts of chalk boards and bulletin boards, for use in schoolrooms and offices, performing any combination of the following duties:

Fills machine trough with glue. Feeds sheets of vitrified steel, cork, fibreboard or vinyl into rollers of glue spreading machine. Removes coated sheets from machine and places glued sides of sheets together, according to specifications, to form single laminated sheets. Cuts laminated sheets, preformed aluminum channeling and chalk troughs to specified dimensions, using hand or power saw for fabrication of boards, frames and chalk holders. Punches holes and notches mitres in aluminum channeling, using punch press. Bends lengths of channeling by hand at mitred points to form corners, and fits channeling around edges of laminated boards. Places partially assembled board units in plastic bags prior to shipping.
May fabricate and assemble custom made boards from various materials.

8599-634 DRAPERY INSTALLER(ret. trade)

DPT:684

GED: 2 SVP: 3 EC: I PA: M 2 4

Assembles drapery rods, and installs rods, drapes, curtains or blinds in customer's residence or place of business:
Assembles and installs rods to fit windows or walls, using hand tools. Installs drapery pull cords, carriers and end pulleys on draper rods and screws and bolts brackets and hangers onto wall, using hand tools. Hangs and arranges curtains, drapes or blinds according to specifications.

8599-638 LUGGAGE FINISHER(leather goods)

DPT:684

GED: 2 SVP: 3 EC: I PA: M 4 7

Attaches hardware and trim to luggage and trunks by performing any combination of the following duties:

Positions templates on luggage or trunk to locate attachment holes for hardware or trim; such as, protectors, clasps, locks, handles, valances and hanger clips. Drills or punches holes, using drill or awl. Attaches hardware or trim with rivets, fasteners or nails, using hand or power tools. Inserts hanger bracket and hangers in clips. Locates divider and strap attachment holes, using template. Drills holes and rivets dividers or straps to interior of luggage or trunk. Assembles luggage or trunk sections to form complete unit, with rivets or nails, using hand or power tools.
May repair damaged luggage or trunks.

8599-642 MIRROR ASSEMBLER(glass)

DPT:684

mirror backer.

GED: 2 SVP: 3 EC: I PA: L 4

Attaches backing and hardware to mirrors:
Cuts masonite backing to specified size and shape, using bandsaw. Places backing on table. Places template over backing or measures with ruler and marks points where holes for clips or hangers are to be

drilled. Drills holes with portable drill. Attaches clips or hangers to backing, using riveting machine. Presses clips attached to backing over edges of mirror to secure mirror to backing, using hand tools. Cleans surface of mirror with cloth. Glues label on mirror and packs in carton.

May drill through backing and mirror with portable drill to insert rosettes. May attach hinges, clips and hangers on masonite backing to make folding mirrors.

8599-646 MIRROR FRAMER(glass) DPT:684
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Installs mirrors in metal, wood or moulded plastic frames:
Assembles mirror frames from precut pieces of metal, wood or plastic and bolts or screws pieces together, using wrench or power screw-driver. Examines mirror for defects and places it in frame. Inserts wooden strips between mirror and frame or covers mirror edge with rubber stripping to secure mirror and prevent breakage. Places framed mirrors on wheeled trucks for removal to backing assembly area.
May bolt mitre-cut mirror strips to frame to form border of shadow-box mirrors.

8599-650 SURFACE PREPARER, PRE-FINISHING(any ind.) DPT:684
putty glazer.
GED: 2 SVP: 3 EC: 1 7 PA: M 4 7

Applies filling or coating material to imperfections in manufactured articles to provide smooth surface, preparatory to application of paint or other final coating:

Examines surface of article for defects, such as holes, cracks or indentations. Spreads and presses dough, putty, mastic or similar material into and over flaws or nail holes, using dauber, spatula or knife. Sands surface, using steel wool, wire brushes, sandpaper or portable grinder, to remove nicks or rough edges and to prepare surface for finishing. Feels surface of article for smoothness.

May brush or spread thinned putty or sealer over surface. May touch up surface with matching colour paint to conceal marred or discoloured spots. May be designated according to article surface prepared; for example,

Pre-Finisher, Wooden Furniture Parts(furn.)
Tire Dougher(rubber)

8599-654 MATCH-HEAD DIPPER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 3 EC: 1 PA: M 4 7

Tends equipment that applies flammable tips to safety matches:

Adjusts machine to immerse matches to specified depth in matchhead compounds. Sets thermostat, or turns valves to regulate compound temperature and viscosity. Observes size and shape of match heads passing on conveyor, and indicates rejects by inserting paper marker between match books. Replenishes compounds in dip tanks. Drains and washes dip tanks to remove thickened compounds.

8599-658 CASE ASSEMBLER AND FINISHER(leather goods) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Assembles and finishes jewellery and instrument cases:

Attaches hinges and locks to lid or base of case, using punch press or pinch pliers. Cuts specified lining or covering material to size, following pattern and using shears. Brushes glue on area to be covered. Positions material on inner or outer surfaces of case and smooths out wrinkles by hand. Trims excess fabric from joints, seams and edges, using knife. Glues or nails bracing blocks to case and covers blocks with material. Presses cushion or pad into upper and lower sections of case. Examines case for alignment of edges and action of hinges and lock.

8599-662 CONCRETE-POLE MAKER(cement, stone & clay) DPT:684
GED: 2 SVP: 2 EC: 1 4 5 7 PA: H 4

Forms concrete poles used for lamp standards or structural columns, performing any combination of the following duties:
Assembles wire cage, used for reinforcing concrete pole, by fastening longitudinal wires to inner support rings with soft steel tie-wires.

Positions cage in bottom half of pole mould and fastens in position with tie wires. Pulls lever to pour concrete from batch tank spout into mould or shovels concrete from wheelbarrow. Completes filling of mould by mounding concrete by hand. Places top half of mould in position, using overhead crane and bolts assembly together, using wrenches. Lifts filled mould into spinning machine with crane and starts machine to compact and remove excess moisture in concrete. Fastens steam line to filled mould and opens valve to cure concrete. Strips moulds from cured poles, using hand tools. Finishes exterior of poles, using hammer and chisel.

8599-666 COVERED-BUTTON MAKER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Covers buttons with fabric or other material:

Cuts covering from layers of material, using die-cutting machine. Places cover over face of metal button and inserts metal back. Positions assembly in kick press. Depresses pedal to lower plunger and clamp covering and metal parts together. Releases pedal and removes covered button.

8599-670 STAMP-PAD MAKER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4

Fabricates inked stamp pads:

Places precut piece of muslin in fixture and places precut pieces of felt, wooden block and rubberized backing on muslin. Applies glue to extended edges of muslin, folds edges around backing and staples corners of muslin to block. Places completed pads in wire basket and lowers into reservoir to saturate pads with ink. Removes basket from ink and allows pads to drain. Feeds pads through hand-operated wringer to remove surplus ink. Places inked pad in metal case.

8599-674 UMBRELLA FINISHER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Finishes umbrellas by attaching handles and pre-sewn covers to assembled frames, performing any combination of the following duties:

Cuts umbrella rod to length and shapes end of rod to fit into handle, using electric cutting and deburring machines. Attaches handle by spreading cement or glue inside socket of handle and inserting rod of assembled frame into handle or fastens handle to rod with rivet or screw, using drill or riveting machine. Attaches pre-sewn umbrella covers to assembled frames, using either of the following methods: 1. Positions frame in machine fixture and holds cover in position to be sewn. Tacks cover to ribs at hinge points and sews corners to tips of ribs, with tacking machine. 2. Positions tips in machine fixture and holds corners of cover in position over rib ends to receive tips. Presses pedal of machine to release and secure tips to corners of cover and ribs.

May repair umbrellas by replacing broken handles or securing loosened covers by sewing in place with needle and thread.

Miscellaneous Product Assembling Occupations, n.e.c. 8599-690 through 8599-722

8599-690 ASSEMBLY-PRESS SET-UP OPERATOR(any ind.) DPT:360
GED: 3 SVP: 5 EC: 1 6 PA: L 4 7

Sets up and operates press to assemble parts or products made of materials, such as metal, plastic, rubber, or glass by such means as crimping, locking, staking, or press fitting:

Installs specified dies or fixtures in press, using hand tools. Adjusts mechanism to regulate stroke of ram. Aligns parts between dies or positions them against fixtures. Operates controls to actuate ram that bends, clinches, or forces parts together. Examines assembled parts for conformance to specifications. Directs other workers in the assembly of parts and products.

May install continuous feed mechanism and synchronize actions of automatic press.

8599-694 RIVETING-MACHINE OPERATOR(any ind.)

DPT:682

GED: 3 SVP: 4 EC: I 5 6 PA: H 4 7

Operates riveting machine to rivet together parts fabricated from sheet metal, steel plates, bars, castings or synthetic materials: Positions, aligns and installs specified dies over anvil and ram of machine, using rules, gauges, shims and wrenches. Turns knobs and setscrews to adjust depth of hammer or pressure limit of ram stroke. Lifts and positions workpiece onto machine. Aligns holes of workpiece and inserts shanks of rivets into holes or onto anvil of machine. Depresses pedal to lower ram or start hammer that expands rivet shank to clinch workpiece. Inspects workpieces for defective riveting. May synchronize action of clinching post of lower die with stroke of hammer, by adjusting air-valve. May fill machine hopper with rivets when operating semi-automatic machines. May set up machine equipped with turret to punch and dimple holes for countersunk rivets and to reposition workpiece after each operation.

8599-698 MANNEQUIN ASSEMBLER(misc. prod. fab., n.e.c.)

DPT:684

GED: 3 SVP: 4 EC: I PA: L 4

Assembles moulded parts to form complete mannequins: Trims openings to fit socket blocks, using knife. Inserts resin-saturated blocks, or adjusts face-plates of pre-installed socket blocks with screwdriver. Attaches or inserts and secures arms and hands into corresponding openings, using screwdriver. Joins trunk of mannequin to legs and hip section by inserting pins into socket fittings. Selects wig according to specifications, and positions it on head of mannequin. May inspect completed mannequin for surface defects.

8599-702 ASSEMBLER, PRODUCTION(any ind.) DPT:684

assembly worker, medium; bench assembler, medium; production worker, medium.

GED: 2 SVP: 3 EC: I PA: M 4 7

Assembles a variety of parts or components of machinery, household appliances and similar items to liberal tolerances at bench or on assembly line, performing any of the following duties: Reads work order, drawings or other instructions to determine assembly sequence. Positions parts in specified relationship to each other, using hands or fixtures. Bolts, screws, clips, solders, cements or otherwise fastens parts together by hand, or using power tools. Tends previously set-up machines, such as arbor presses, drill presses, punch presses, riveting machines, spot welders or milling machines to perform press-fitting, fastening or cutting operations. Fits and adjusts parts to meet operational specifications. See also Unit Group Definition 8599, OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.

May be assigned to different work stations according to production requirements. May be designated according to product or part assembled; for example,

Automotive-Radiator Assembler(motor vehicle)
Gate-Valve Assembler(mech. equip., n.e.c.)
Pipe-Fittings Assembler(metal fab., n.e.c.)
Refrigerator Assembler(electric. equip.)

8599-704 ASSEMBLY-PRESS OPERATOR(any ind.)

DPT:684

GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Operates previously set-up press that assembles parts or products made of materials, such as metal, plastic, rubber or glass: Positions workpieces in specified relationship in dies or fixtures under ram. Operates controls to lower ram that assembles parts. Examines assembled parts for conformance to specifications. May tend machine equipped with continuous feed mechanism.

8599-706 ASSEMBLER, SMALL PRODUCTS(any ind.)

DPT:684

assembly worker, light; bench assembler, light; production worker, light.

GED: 2 SVP: 2 EC: I PA: L 4 7

Assembles a variety of parts or components to mass produce small products or subassemblies, adeptly performing one or more repetitive tasks, at bench or on assembly line:

Positions parts in specified relationship to each other, using hands, tweezers or fixtures. Bolts, screws, clips, solders, cements or otherwise fastens parts together by hand, or using hand tools or power tools. Tends previously setup machines; such as, arbor presses, drill presses, punch presses, riveting machines, spot welders or milling machines to perform press-fitting, fastening or light cutting operations. Performs simple fitting and adjustment. Frequently works as member of assembly group, assembling two or three specific parts and passing unit on to another worker. See also Unit Group Definition 8599, OTHER PRODUCT FABRICATING, ASSEMBLING AND REPAIRING OCCUPATIONS, N.E.C.

May clean, paint, trim, or otherwise finish products. May be assigned to different work stations according to production requirements. May be designated according to product or part assembled; for example, Dust-Brush Assembler(electric. equip.)

Fishing-Reel Assembler(sport. & toy)

Lock Assembler(metal fab., n.e.c.)

Ornament Maker(misc. prod. fab., n.e.c.)

Toy Assembler(sport. & toy)

8599-710 HAND RIVETER(any ind.)

DPT:684

GED: 2 SVP: 2 EC: I 5 PA: L 4

Rivets together light-gauge metal, leather or plastic parts to assemble articles, such as kitchenware, hardware, luggage, household appliances and metal furniture:

Aligns predrilled holes in parts, and inserts rivets into holes. Positions parts with one end of rivet against anvil or dolly (metal block). Places rivet gun or rivet set on other end of rivet. Presses trigger of gun, or strikes end of rivet set with hammer to spread rivet shank over hole and join parts.

May predrill holes in parts, using drill press or portable drill.

8599-714 POWER-SCREWDRIVER OPERATOR(any ind.)

DPT:684

GED: 2 SVP: 2 EC: I 5 PA: L 4

Operates power screwdriver to tighten bolts and nuts or drive screws to assemble products fabricated from wood, metal or other materials: Installs specified torque chuck onto machine spindle. Inserts shank of specified wrench or screwdriver bit into chuck and tightens, using chuck key. Inserts screw or bolt through holes of workpiece, or nut onto threaded stud, and starts threads manually. Positions workpiece in clamp. Depresses lever to lower spindle, and tightens screw or bolt to specified torque.

8599-718 RIVETING-MACHINE TENDER(any ind.) DPT:685

GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends riveting machine to rivet parts together, fabricated from materials; such as, sheet metal, wood, plastic, cloth or leather:

Aligns holes of workpieces. Inserts rivet shanks through holes or onto anvil of machine. Positions rivets or holes in workpieces over anvil or against fixtures. Depresses pedal to activate hammer or ram that expands rivet shanks to clinch workpieces. Fills automatic riveting-machine hoppers with rivets. Inspects riveted joints for defective heads, distorted shanks or other defects.

May tend machine equipped with rotating die.

8599-722 STAPLING-MACHINE TENDER(any ind.) DPT:685

GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that staples parts together to produce products made from plastic, paper, leather, felt, canvas and other materials:

Loads machine with wire staples or spool of wire, manually. Positions workpiece under head of machine. Sets machine-table flat for side stitching or tent-shaped for saddle (back) stitching. Steps on pedal to lower ram that cuts off wire staple and forces it through material and clinches it.

May be engaged in stapling a specific product and be designated accordingly; for example,

Box Stitcher(paper prod.)

Shell Stapler(leather goods)

Miscellaneous Product Repairing

Occupations, n.e.c.

8599-742 through 8599-770

8599-742 SURVIVAL-EQUIPMENT REPAIRMAN(bus. serv.; gov. serv.) DPT:684
GED: 3 SVP: 4 EC: 1 PA: M 4 7

Inspects and repairs aircraft or marine survival equipment, such as life rafts, inflatable jackets and seat belts:
Activates gas cylinder to inflate life raft and tests pressure, using watch and monometer. Brushes bubble-fluid on fabric to detect perforations or to test patch seal. Repairs holes in fabric, using repair kit. Tests and records tensile strength of sample seat belts, using tensile test machine. Inspects other life raft equipment and replaces those items which have exceeded their life-cycles. Repacks life raft into container, sprinkling talc on fabric to prevent sticking when folded. Records relevant information in logbook and signs entries in accordance with authorized regulations.

8599-746 REPAIRMAN, METAL FURNITURE(furn.) DPT:684
GED: 2 SVP: 4 EC: 1 5 6 7 PA: M 3 4 7

Repairs or replaces parts of damaged or defective metal furniture:
Welds cracks with acetylene torch. Files, scrapes or sands parts to remove dirt, paint or rust. Fills in holes, cracks, nicks, welding marks and other imperfections with solder or quick drying metal filler. Rubs or grinds filled spots smooth, using abrasive cloth or portable grinder. Bends or hammers dented or twisted parts to original shape. Replaces defective furniture parts that are not repairable.
May reassemble metal furniture. May uncrate, assemble, install and repair metal or wooden furniture, office equipment or fixtures in customer's residence or place of business and be designated accordingly; for example,
Furniture Installer(furn.; ret. trade)
Furniture Set-Up Man(furn.; ret. trade)

8599-750 CIGARETTE-LIGHTER REPAIRMAN(misc. prod. fab., n.e.c.) DPT:584
GED: 2 SVP: 3 EC: 1 PA: S 4 7

Repairs and cleans cigarette lighters:
Examines lighter to determine nature of defect or repairs required. Disassembles lighter and adjusts or replaces parts, such as spark-wheels, injector valves, and clutch gears, using hand tools. Removes cotton and defective wick from lighter, inserts new wick and repacks cotton, using tweezers and picks. Cleans lighters, using solvent. Polishes and refinishes surfaces, using hand polisher. Inserts flint and fills lighter with fuel. Records repair information.

8599-754 BELT REPAIRMAN(mech. equip., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 5 PA: H 4

Repairs belts used to drive machinery and convey materials:
Places belt in let-off rack, using chain hoist, and unwinds belts onto inspection table. Visually examines belts, and cuts out defective sections, using knife. Installs replacement patches by fitting patches to belting. Applies cement, and cures belt section in portable vulcanizer. May replace damaged section of drive belts by cutting and inserting strip of belting, using metal-clamp fasteners. May repair conveyor belts, using splicing jig, hand and power tools, and be designated, Conveyor-Belt Repairman

8599-758 PEN AND PENCIL REPAIRMAN(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Repairs and adjusts ballpoint pens, fountain pens and mechanical pencils by performing any combination of the following duties:
Examines pens or pencils or reads repair tag to determine nature of repair or adjustments. Disassembles pens or pencils, using hand tools. Replaces defective parts and reassembles units manually or using special devices. Straightens or aligns pen points, using straightening block, mandrel, magnifying lens or hand tools. Polishes pens and pencils, using electric buffer. Washes pens and pencils, using solvent. May operate pantograph or stamping machine to inscribe lettering on pens and pencils. May operate small lathe to fabricate or modify parts for pens and pencils.

8599-762 SCAFFOLD REPAIRMAN(struct., plate & ornam-metal) DPT:684
GED: 2 SVP: 3 EC: 1 6 7 PA: H 4

Repairs metal scaffolding:
Examines scaffolds to determine extent of damage. Replaces damaged rods, using burning equipment and welding torch. Paints scaffolding, using spray equipment, or dips sections into paint tank, using hoist. Scraps severely damaged scaffolding.
May dismantle and assemble scaffolding prior to and after repair.

8599-766 UMBRELLA REPAIRMAN(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 3 EC: 1 PA: L 4

Repairs umbrella frames and covers:
Replaces springs, ribs, rods, handles, and other defective parts of umbrella frame, using hand tools and electric drill. Reassembles frame, using hand tools. Sews small rips in umbrella cover, manually, and attaches cover to frame.

8599-770 DATE-STAMP ASSEMBLER AND REPAIRER(misc. prod. fab., n.e.c.) DPT:684
GED: 2 SVP: 2 EC: 1 PA: L 4 7

Assembles or repairs date or number hand stamps:
Selects parts according to specifications. Cements and joins ends of rubber letter or number strips to form bands. Positions bands around metal bar and fits bar onto end of stamp frame. Positions band-turner wheels and washers inside circular bands and inserts rivet pin through stamp frame and band wheels, using holding-jig while assembling parts. Nails wooden handle to frame. Repairs or replaces date or number bands on stamps returned by customer.
May grind grooves in back of type to fit notched wheel that advances numbers or dates.

Miscellaneous Cutting and Slitting Machine Occupations, n.e.c. 8599-790 through 8599-810

8599-790 SLITTING-MACHINE OPERATOR(any ind.) DPT:662
GED: 3 SVP: 4 EC: 1 5 6 PA: M 3 4 7

Operates slitting machine to cut materials; such as, adhesive-coated fabrics, abrasive-coated materials, paper products, metallic foil or synthetic materials into strips or specified widths:
Selects and verifies type of material to be cut, according to work order. Spaces rotary blades on machine shaft, according to cutting widths specified and secures blades into position, using hand tools and turning setscrews. Signals helper to mount material onto machine stand to place take-up tubes on re-wind shaft, and to thread material through machine. Starts machine and adjusts controls to regulate cutting and winding of material. Signals helper to remove finished rolls from machine at end of production run. Records production data and equipment performance in log book.
May slit a specific product or material and be designated accordingly; for example,
Abrasive-Coated-Material-Slitter Operator(non-metal. min. prod., n.e.c.)
Adhesive-Coated-Material-Slitter Operator(misc. prod. fab., n.e.c.)
Aluminum-Foil-Slitter Operator(non-ferrous metal)
Film-Slitter Operator(chem., n.e.c.)
Linoleum-Slitter Operator(linoleum prod.)
Paper-Slitter Operator(paper prod.)

8599-794 CUTTER OPERATOR(any ind.) DPT:682
sheet-cutter operator.
GED: 3 SVP: 4 EC: 1 5 6 PA: M 3 4 7

Operates cutting machine, equipped with rotary or reciprocating blades, to cut rolls of material; such as, paper, paperboard, synthetic or coated materials into sheets, of specified size:
Inserts shaft into core of roll manually and positions roll on cutter rack, using electric hoist. Threads end of material through feed rollers, under or across cutting blades, and aligns material against machine guides. Turns controls to adjust tension of material, to synchronize

timing of cutting blades with rate of material feed and to regulate length and width of cut. Starts machine and verifies size of cut material, using rule, or observes that knife has cut through pre-printed mark on paper. Re-adjusts machine, as required, to produce sheets of specified dimensions, using hand tools. Pushes button to begin production run and observes operation for conformance to standards. May replace worn cutting blades, using hand tools. May stack cut sheets on pallets and remove them, manually or using hoist.

8599-798 DIE-CUTTING-MACHINE OPERATOR(any ind.) DPT:682

clicker-machine operator; die-cutter.

GED: 3 SVP: 4 EC: 1 5 PA: M 4 7

Operates machine to cut parts from multiple layers of cloth, leather, paper, synthetics, or other materials:

Reads work order and selects specified dies. Positions material on cutting bed of machine to obtain maximum number of parts according to size, grain, thickness, or weight. Straightens edges of material layers to prevent partial cuts. Positions one or more cutting dies on material, or clamps dies to head of machine and positions material under dies. Depresses pedal and moves lever to activate ram that forces single or multiple dies through material. Removes cut parts from machine. Selects sample and verifies conformance with standard pattern. Places cut parts in storage area according to size, shape and quality.

May perform test-cutting operations to ensure correct die alignment. May lubricate machine periodically. May be designated according to material cut; for example,

Abrasive-Disk Cutter(non-metal. min. prod., n.e.c.)

Glove Cutter(garment & fabric)

Label Cutter(paper prod.)

Lining Cutter(shoes)

8599-802 CUTTER, MACHINE(any ind.) DPT:685

guillotine tender; shearer.

GED: 2 SVP: 3 EC: 1 5 6 PA: L 4 7

Tends machine that cuts coated fabrics, paper products, synthetic film, leather, or other materials to specified dimensions by one or the following methods:

1. Spaces guide or stop gauge along calibrated scale of cutting table, according to length of cut specified, and turns knobs to secure guide or gauge in position. Pulls single or multiple layers of material across cutting table, up to guide and trips lever to clamp material in position. Lowers lever-type blade by hand to cut material. 2. Spaces stop gauge along calibrated scale, according to length of cut specified, and secures gauge in position. Places single or multiple layers of material on bed of machine with edges against stop gauge. Depresses pedal to activate power-driven lever-type blade that lowers and cuts material. 3. Mounts roll of material onto shaft or positions flat-folded material on machine feeder. Threads end of material through guides and automatic-feeding device. Turns knobs to regulate feeding device according to length of cut specified. Starts machine that automatically feeds material under lever-type blade and cuts material into lengths. Stacks cut material on table or handtruck.

May change machine blade, using hand tools. May cut a particular material or article and be designated accordingly; for example,

Abrasive-Belt Cutter(non-metal. min. prod., n.e.c.)

Corrugated-Box Cutter(paper prod.)

Leather Cutter(leather goods)

Paper Cutter(paper prod.)

Tile Cutter(rubber)

Wrapping Film Cutter(paper prod.)

8599-806 TUBE-CUTTING-MACHINE TENDER(misc. prod. fab., n.e.c.; paper prod.) DPT:685

cut-off-machine tender.

GED: 2 SVP: 2 EC: 1 5 6 PA: L 4

Tends machine that cuts heavy fibre or cardboard tubing to specified lengths:

Mounts mandrel of specified size on chuck of machine. Spaces cutters and adjustable end-stops along supporting shaft, using gauge and wrenches. Adjusts height of shaft according to size of mandrel. Slides long tube over mandrel. Depresses lever to raise blades that cut tube into lengths. Places cut pieces onto revolving tray or conveyor.

8599-810 SLITTING-MACHINE-OPERATOR HELPER(any ind.) DPT:687

GED: 2 SVP: 2 EC: 1 5 6 PA: M 3 4 7

Helps operate slitting machine by performing any combination of the following duties:

Positions roll of material, such as adhesive-coated fabrics, abrasive-coated materials, paper products, metallic foil or synthetic materials at rear of machine, using handtruck or hoist. Assembles cores, collars and shafts on roll, and positions roll in machine brackets or delivery mandrel, using hand tools and hoist. Places take-up tubes of specified widths on rewind shaft. Threads material over tension bar, between feed rollers, under rotary blades, and laps end of material around take-up tube. Helps splice new or flagged rolls, using tape. Places finished roll on bench and removes shaft from slit rolls, using hand tools and hoist. Moves load to next process station or to storage, using handtruck. See also definition for term title, 02-160 HELPER (any ind.).

May space cutting blades on machine shaft and adjust side guides and tension coil, according to width specified, and secure parts in positions, using hand tools.

**Miscellaneous Machine Operating,
Tending and Feeding Occupations, n.e.c.
8599-830 through 8599-999**

8599-830 BOTTLECAP-SEAL-MACHINE SETTER(misc. prod. fab., n.e.c.) DPT:380

crown-assembly-machine set-up man.

GED: 3 SVP: 6 EC: 1 5 PA: M 4 7

Sets up and operates battery of machines that insert and glue cork, paper or aluminum foil into bottlecap shells:

Installs punches and dies in crown assembly machines, following drawings and specifications, and adjusts stroke of punches that force lining material into caps. Turns adjustment screws to regulate feed mechanism, rate of glue flow, and heating flame. Starts machine and examines sample caps to verify conformance to specifications. Observes operation of machine to detect faults and diagnose causes of malfunctions. Disassembles machine and replaces broken or worn parts, using hand tools.

May set up and operate similar machines, fitted with injection moulding device, to insert molten plastic seal in caps. May repair broken machine parts, using welding equipment. May repair machine conveyor belts.

8599-834 PENCIL-MACHINE SET-UP MAN(misc. prod. fab., n.e.c.) DPT:380

GED: 3 SVP: 6 EC: 1 5 6 PA: H 3 4 7

Sets up and adjusts battery of machines that fabricate, tip or trim wooden pencils:

Installs and adjust feed mechanisms, guides, rollers, tracks, machine fittings and attachments, according to size and shape of pencils specified, using hand tools and gauges. Adjusts controls, such as setscrews and cams, to synchronize machine mechanisms. Disassembles machines and replaces worn or defective parts, such as circular knives, grinding wheels, rollers and machine belts. Sharpens machine punches and blades, using files and bench grinder. Starts machines and examines pencils for splintered ends, nicks or other defects. Makes final adjustments to machine to produce pencils according to specifications.

May be designated according to machine set-up, for example,

Pencil-Making-Machine Setter

Pencil-Tipping-Machine Setter

8599-838 EMBOSsing-IMPRINTING-PRESS OPERATOR(any ind.) DPT:682

GED: 3 SVP: 6 EC: 1 5 6 PA: L 4 7

Operates press to emboss or imprint lettering or designs on paper, leather or plastic articles by performing any combination of the following duties:

Selects and installs embossing or imprinting plate on press head, using bolts or adhesive. Cuts piece of cardboard or plastic to appropriate size of plate. Positions cardboard or plastic sheet on machine bed. Depresses pedal to lower plate and impress cardboard or plastic to form counter-die. Trims counter-die, using compass, square and knife

or cutting machine. Aligns and secures counter-die on machine bed. Turns valves or operates switch to heat plate to specified temperature. Sets guides and positions article on machine bed over counter-die. Pulls lever or depresses pedal to emboss or imprint article. May operate automatically fed press. May make counter-die from embossing compound and glue. May emboss goldleaf lettering or designs on articles.

8599-842 INSULATION-PANEL MAKER(asbestos & min. wool) DPT:682
GED: 3 SVP: 5 EC: I 5 6 7 PA: H 4 7

Operates machine that combines mineral wool and paper coverings and sews them together to make insulation panels: Reads work order and adjusts position of sewing heads and trim and cut-off saws. Loads twine and paper according to specifications. Threads paper through feed rollers. Starts machine and synchronizes speed of paper feed rollers and mineral wool conveyors, using hand tools. Observes combined materials feeding into section of machine equipped with roller cutters, that stitches and trims parts to make insulation panels of given dimensions. Removes finished panels from machine and places them on pallet for transfer to storage area.

8599-844 TABLET-COATING-MACHINE OPERATOR(pharm. & toil.) DPT:682
GED: 3 SVP: 4 EC: I PA: M 4 7

Controls battery of machines that apply coatings to pharmaceutical tablets to flavour, colour, preserve, add medication, or control their disintegration rates: Dumps uncoated tablets into rotary pans of machines and starts machine by pressing button. Pours measured amounts of liquid coatings, according to formula or production order, over tablets to form base or successive coats. Sprinkles dusting powder over tablets and stirs them to prevent their sticking together and to produce uniform coating. Examines coated tablets for defects, such as chips and discoloration. Measures and weighs randomly selected tablets to ensure compliance with specifications, using gauge and scale. Dumps coated tablets and measured amount of liquid wax into canvas-lined pan and starts pan revolving to glaze tablets. May compound and mix coatings according to formula, using steam-jacketed-agitator tank.

8599-846 CIGARETTE-FILTER-MACHINE TENDER(tobacco) DPT:685
GED: 2 SVP: 4 EC: I 5 PA: L 4 7

Tends machine that wraps and cuts cigarette filter tips: Installs rolls of filter material and paper on spindles of machine and threads ends between rollers. Starts machine by depressing button and observes machine operation to detect malfunction. Turns handwheel to adjust feed mechanism and cutting knives. Examines them for defects in size cutting, gluing and filling. Removes and replaces empty paste cylinders. Cleans folder block, beater blades, paste wheel, cut-off blades and inner glue nozzle, using rags and alcohol. May repair or replace worn, damaged or broken parts, such as pulley belts and cutting knives, using hand tools.

8599-850 DESIGN-AND-LETTERING STAMPER(any ind.) DPT:684
GED: 2 SVP: 3 EC: I PA: L 4 7

Operates machine that stamps or imprints designs or lettering on paper, cloth, rubber, wood, leather or plastic articles by performing any combination of the following duties: Sets type in type bar and positions and locks bar in machine or installs and locks type die in machine. Turns on heating element over die or bar. Positions article on machine bed or fills machine hopper. Presses button or depresses pedal to lower die or bar that stamps or imprints design or lettering on article. Inspects article for stamping or imprinting defects, alignment and clarity, and adjusts machine as required. Records, wraps and packs stamped or imprinted articles. Cleans and lubricates machine. May plan layout of design or lettering on material. May be concerned with coloured-leaf or hot-die stamping and be designated accordingly; for example, Gold-Leaf Stamper Hot-Die Stamper

8599-854 RETUBULATOR(glass) DPT:684
GED: 2 SVP: 3 EC: I 6 PA: L 4 7

Replaces defective glass exhaust-tubes on outer piston of vacuum-bottle-filler units: Prepares filler unit for retubing by breaking off defective tube and filing down remaining sprue. Places filler on preheating rolls to prepare glass for fusing. Removes filler from preheating rolls and inverts it on retubulating machine. Lowers lever to feed replacement tube into fixture, and depresses pedals to fuse tube to filler. Removes retubed filler from machine and places over annealing fires to relieve internal stress. Packs fillers in carton with tubes protruding. Inspects fusing location to detect voids, using spark-testing device, and discards rejects.

8599-858 COMPRESSOR, TABLET(any ind.) DPT:685
table-making-machine tender.
GED: 2 SVP: 3 EC: I 5 6 PA: M 4 7

Tends machine that compresses granulated ingredients into tablets of specified size and shape: Installs dies in machine and adjusts spring tension and ram pressure of air or hydraulically-operated press according to specifications, using hand tools. Scoops or dumps ingredients into hopper, and presses button to start machine that compresses ingredients into tablets. Examines, feels and crumbles tablets, periodically, to detect imperfections, such as chips, soft centers or excessive brittleness. Measures, weighs and tests samples, using micrometer, scale and hardness tester, or routes samples to laboratory for analysis. Readjusts machine tension and pressure, as required, to produce tablets according to specifications. Removes and cleans dies and compression chambers, using hand tools, air hose, water hose and cloth. May blend ingredients preparatory to compressing into tablets. May weigh and package tablets. May be designated according to type of tablet produced; for example, Compressor, Candy(confection.) Compressor, Medicinal Tablets(pharm. & toil.) Compressor, Salt Tablets(food & bev., n.e.c.)

8599-862 CORN-PLASTER-MACHINE TENDER(pharm. & toil.) DPT:685
GED: 2 SVP: 3 EC: I 5 PA: L 4 7

Tends machine that assembles components of corn and bunion plasters: Loads spools of adhesive, felt and plastic-film strips into holders and inserts ends of strips into machine. Fills reservoir with medication. Depresses switch to start machine. Adjusts cycling of machine to synchronize placement of adhesive strip, felt ring, medication and overlapping protective film. Inspects product for conformance to specifications, periodically. May tend machine that assembles adhesive bandages, cuts them to length and seals them individually in paper wrappers and be designated accordingly, Adhesive-Bandage-Machine Tender

8599-864 MARKER(any ind.) DPT:587
stenciler.
GED: 2 SVP: 2 EC: I PA: L 4 7

Marks, stencils or affixes identifying data on products, merchandise, materials or containers, according to specifications: Marks, stencils or affixes trademarks or other identifying information such as size, weight, colour, grade or process code on merchandise, material, container or product, using one or more methods such as metal punch and hammer, labels, stencil, brush, roller, rubber stamp, spray gun, ink, crayon, branding iron or tags. May clean items before marking. May use printing mechanism or labeling press. May be designated according to product or item marked; for example, Barrel Marker Pipe Marker Stamper, Carton

8599-866 ABRASIVE-WHEEL BINDER(non-metal. min. prod., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: H 4

Tends machine that winds reinforcement wire around abrasive wheels:

Positions spool of specified wire on machine feed rack, using hoist, and threads wire through machine guides. Mounts abrasive wheel on arbor and positions in fixture of machine, using hand tools. Starts machine that winds wire in groups of turns on sides of abrasive wheel for reinforcement. Crimps and solders wire to maintain specified tension, using hand tools and soldering iron. Examines completed assembly, visually, to ensure close fit around wheel. Lifts wheel from machine for removal to inspection area.

8599-870 BOTTLECAP-SEAL-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
crown-assembly-machine tender.
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that inserts and glues cork, paper, plastic or aluminum foil into bottle cap shells:

Pours glue into machine glue container. Turns valves to adjust gas flame to heat glue and to regulate flow of glue into machine. Mounts roll of lining material on machine spindle and threads material through feeder rolls. Dumps supply of bottlecap shells into machine hopper. Starts machine and observes flow of shells from hopper into machine. Pries jammed shells free, using hand tool. Examines glued shells leaving machine to detect defects, such as bent shells, defective linings, or chipped shells. Selects sample shells at random, pries glued disk free with pick, and observes quantity and texture of glue. Records production data on work sheet.

8599-874 CARPET-TAPE-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends machine that cements cloth stripping to paper tape and inserts metal staples in laminated product to make seam-joining carpet tape: Installs metal stripping, paper tape and cloth rolls on let-off racks. Threads metal stripping into die opening, to punch out staples, and turns valve to fill glue reservoir. Places cardboard core on wind-up spindle. Jogs machine, using start and stop buttons, to thread cloth over glue-applicator brush onto paper tape, over stapling hammer and onto wind-up core. Starts machine and observes operation to detect malfunction. Removes defective sections of tape and splices ends. Cements label band around full roll.

8599-878 HEADING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that trims and smoothes ends of pencils, marking crayons or pencil erasers, to specified length:

Dusts ends of products with cornstarch or similar powder to prevent them from sticking together, using brush. Places pencils, pencil erasers or marking crayons in hopper of machine and presses button to start machine that trims and smooths ends of product. Examines product for chips, splits and other defects. Boxes or bundles product at work station.

May maintain machine by sharpening rotary knife with grinding wheel or replacing worn sandpaper or knives, using hand tools.

8599-882 INSULATION-TUBE WINDER(asbestos & min. wool) DPT:685
GED: 2 SVP: 2 EC: I 5 6 PA: M 4 7

Tends machine that winds insulating material around mandrel to form insulated pipe covering:

Places mandrel, of designated size, in winding jig and attaches end of sheet of insulating material, such as glass fibre or asbestos, to mandrel. Turns mandrel wheel or depresses pedal of automatic winder to wind and bond specified number of layers of insulating material around mandrel. Lifts and turns mandrel to vertical position. Removes tube from mandrel. Inspects finished tubes for uniformity of wall thickness and smoothness of surface. Stacks tubes on skids, handtruck or conveyor and replaces mandrel in jig.

May paste and wrap completed tube in canvas or paper jacket.

8599-886 PENCIL-ERASER-MAKING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
crayon-making-machine tender.
GED: 2 SVP: 2 EC: I 5 PA: M 4

Tends machine that rolls paper around coloured lead or rubber sticks: Installs rolls of paper and string on mandrels, manually inserting rod through center of each roll. Threads paper between guides and rollers, and turns screw to adjust pressure on scoring knives. Fills hopper with sticks of coloured lead or rubber. Presses button to start machine that rolls glued-paper sheets around coloured lead or rubber sticks, and inserts peeling-string. Observes operation to detect malfunction. Replaces knives and makes machine adjustments as required, using hand tools.

8599-890 PENCIL-MAKING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
lead-laying-and-gluing-machine tender.
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Tends machine that places pencil leads in grooves of wooden slats and glues slats together to form pencil blanks:

Places pencil leads in feed hopper of machine, manually. Fills reservoirs of machine with glue. Presses button to start conveyor that supplies machine with wooden slats. Starts automatic machine that applies glue to grooved surface of slats, places lead in grooves and joins cemented slats to form pencil blanks. Observes machine operation to detect malfunction. Stops and clears machine of jams.

8599-894 RIBBON INKER(misc. prod. fab., n.e.c.) - DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends machine that impregnates typewriter ribbon with ink: Fills machine pans with ink of specified colour. Loads machine with roll of silk, cotton or nylon ribbon. Starts machine to rotate rollers that dip into ink and press ink on ribbon. Adjusts speed of machine according to absorption properties of ribbon material. Inspects inked ribbons, using densitometer.

May shape inner curve of divider that separates inks of bi-coloured ribbons, using file and emery cloth, until curve matches that of inking roller.

8599-898 RIBBON-LOOPING-MACHINE TENDER(misc. prod. fab., n.e.c.) DPT:685
rosette-machine tender.
GED: 2 SVP: 2 EC: I PA: L 4

Tends automatic machine that folds and binds ribbon into loops for making rosettes:

Places roll of ribbon on spindle, and inserts end through machine guides. Installs two spools of plastic string on posts and threads strings into machine-feeding mechanism. Starts machine that forms ribbon into loops, twists two strings through one end of each loop, and cuts ribbon to predetermined length, to make ribbon blanks. Places filled trays of ribbon blanks in designated area. Observes machine operation and reports malfunctions to supervisor.

8599-902 RIBBON WINDER(misc. prod. fab., n.e.c.) DPT:685
typewriter-ribbon winder.
GED: 2 SVP: 2 EC: I PA: S 4 7

Tends machine that winds typewriter ribbons onto spools:

Sets yardage indicator on machine, according to ribbon length specified on work order. Places ribbon supply reel on mandrel and draws ribbon around rollers and through ribbon guide. Adjusts ribbon guide, according to width of ribbon. Places empty spool on spindle and attaches end of ribbon from supply reel to spool. Depresses pedal to start machine that winds ribbon onto spool. Examines ribbon during winding for defects in fabric, inking and winding. Removes completed spool from spindle and attaches hooks or eyelets onto ends of ribbons. Attaches fasteners over end of ribbon to prevent unwinding.

8599-906 STAKING-MACHINE TENDER(plastic prod.)
DPT:685
hot staker.
GED: 2 SVP: 2 EC: I 7 PA: S 4

Tends hot-staking machine to insert or imbed metal pins or studs in plastic component:
Positions plastic component in locating device. Clamps and locks metal pin or stud in heated holder. Pulls machine lever to bring hot metal pin or stud in contact with component and applies pressure to force hot pin or stud into plastic. Releases pin or stud from holder and operates trip lever to raise holder. Removes plastic component from locating fixture. Examines staked component and places it on tray.

8599-910 TWISTING-MACHINE TENDER(misc. prod. fab., n.e.c.; paper prod.)
DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that twists strands of metal foil, cotton, wire, plastic or paper to produce items, such as twisted-paper cord or tinsel strands:
Places spools of metal foil, wire, plastic or cotton on spindles or bobbins and threads materials through machine guides. Starts machine that automatically weaves and twists materials into items, such as twisted-paper cord or single strands of tinsel. Cuts twisted material at end of each cycle, using shears. Removes filled rolls from machine for further processing or packaging operations. Observes machine operation and reports defects to supervisor.
May assemble light paper and metal decorations, using cutters and adhesives. May package tinsel decorations, according to specifications.

8599-914 VACUUM-BOTTLE-SILVER-MACHINE TENDER(glass)
DPT:685
GED: 2 SVP: 2 EC: I PA: L 4 7

Tends equipment to silver filling unit of vacuum bottle:
Obtains filling unit from annealing oven conveyor and inserts processing tube of unit into funnel of silvering machine. Presses button to start machine that combines and pumps silvering chemicals through processing tube into cavity between walls of filling unit. Removes unit on completion of silver-filling cycle. Places filler on rollers that rotate unit to cover interior surfaces completely with precipitated silver, through chemical reaction. Removes silvered unit from rolls. Inserts processing tube into suction hose of machine and presses button to start cycle that removes excess solution and rinses silvered cavity with de-ionized water. Removes filling unit and examines silvering. Discards damaged units, returns rejects for re-silvering and places acceptable units on conveyor to drying oven to evaporate remaining moisture.
May tend machine that automatically washes, silvers and drains vacuum bottles.

8599-918 WINDOW-SHADE MOUNTER(misc. prod. fab., n.e.c.)
DPT:685
GED: 2 SVP: 2 EC: I PA: L 4

Tends machine that cuts plastic-window-shade material to specified length and glues material to wooden rollers:
Reads work order to verify cutter settings and fills glue reservoir. Pulls shade material through machine guides and under cutter blade. Places roller in holding device which moves roller under glue spreader. Depresses pedal to cut plastic to specified length, and presses button to apply glue to roller. Removes roller from holding device, aligns and smooths material along glued edge of roller, manually, to affix material to roller. Positions roller in winding device that rolls up shade.
May mount window shades to customer's specifications by cutting wooden roller to specified length with circular saw, stapling designated material to roller and rolling up shade in winding device.

8599-922 BUTTON-SORTING-MACHINE FEEDER(misc. prod. fab., n.e.c.)
DPT:686
GED: 2 SVP: 2 EC: I PA: L 4

Feeds battery of machines that sort button blanks or buttons, according to size or thickness:
Loads buttons or button blanks into machine hopper, using hand scoop or by tilting container. Presses switches to start machines that remove polishing media and move buttons or button blanks through

series of screening cylinder to sort them, according to size or thickness. Removes filled containers from sorting machines and moves them to inspection department, using dolly or handtruck.
May unload buttons from polishing barrel into container.

8599-926 PENCIL-TIPPING-MACHINE FEEDER(misc. prod. fab., n.e.c.)
DPT:686
GED: 2 SVP: 2 EC: I 5 PA: L 4 7

Feeds automatic machine that fastens metal tips or caps and eraser plugs to ends of wooden pencils:
Lifts and dumps pails of caps, tips and plugs in machine hoppers. Places pencils in hopper, and presses button to start machine. Removes tipped pencils from bin of machine and examines them for defects such as broken plugs or loose tips. Places tipped pencils on conveyor or ties them into bundles for further processing.
May feed tipping machine that rounds pencil ends.

8599-930 TUBULATING-MACHINE FEEDER(glass)
DPT:686
GED: 2 SVP: 2 EC: I 6 PA: L 4 7

Feeds tubulating machine that automatically fuses glass exhaust tube to outer piston (outer-glass shell) of vacuum-bottle-filler unit:
Removes outer piston from container. Inverts piston on fixture of automatic-tubulating machine, each time machine indexes. Observes automatic operation as glass tube is fused to outer piston. Lifts tubulated piston from machine and places it on annealing rolls to relieve internal stress. Removes annealed piston and examines it for defects. Records production data.
May place outer piston on preheating rolls over gas flame for specified time, prior to tubulation if machine does not preheat automatically.
May feed neck-sealing machine that fuses outer piston to inner piston to form vacuum-bottle-filler units and be designated accordingly,
Neck-Sealing-Machine Feeder

8599-934 VACUUM-BOTTLE-EXHAUST-MACHINE FEEDER(glass)
DPT:686
GED: 2 SVP: 2 EC: I 6 PA: L 4 7

Feeds machine that removes air from between inner and outer pistons, of vacuum-bottle-filler units, and seals them together:
Removes filler unit from drying oven. Examines unit for defects. Inserts and secures unit in chuck of exhaust machine, each time machine rotationally indexes. Removes exhausted and tipped filler unit from discharge end of machine. Observes vacuum gauges during operations to detect machine malfunction.
May seal filler-unit cavity, using hand torch, and be designated accordingly,
Vacuum-Bottle-Hand Tipper

8599-936 IMPREGNATOR, HAND(misc. prod. fab., n.e.c.)
DPT:687
GED: 2 SVP: 2 EC: I 7 PA: L 4

Impregnates cork products, such as floats, washers and gaskets by immersing them in resin or graphite solutions:
Pours premeasured quantities of liquid ingredients into tank or tumbler to prepare coating solution. Dumps cork products into solution to soak. Determines soaking cycle of products, using knowledge gained through experience. Scoops cork products from tank or tumbler, using strainer. Drains off excess solution and dumps cork products into containers or places them on racks on dolly to dry. Pushes dolly into drying room or oven.

8599-938 WINDER, SUTURE MATERIAL(pharm. & toil.)
DPT:687
GED: 2 SVP: 2 EC: I PA: S 4 7

Winds single or multiple lengths of suture material onto reel:
Pulls out holding flaps on reel, inserts end of strand under one flap, and places reel on power-driver wheel. Presses pedal to start wheel, guides strand as wheel spins, to wind specified lengths of suture material onto reel. Observes strands as they pass under inspection light to detect thin or weakened areas. Rejects lengths that do not conform to specifications. Cuts material from spool, using scissors. Inserts wound reels into plastic envelopes for subsequent sterilization.

8599-942 STRINGING-MACHINE FEEDER(paper prod.)
DPT:686
GED: 2 SVP: 2 EC: 1 PA: L 4

Feeds machine that automatically threads and fastens string or wire to paper tags:

Loads punched paper tags and rolls of string or wire into machine-feeding mechanisms. Presses button to start machine that fastens and secures wire or string through hole in tag. Removes discharged tags and packs them into boxes for shipment. Observes machine operation and reports malfunctions to supervisor.

**8599-999 FABRICATORS, ASSEMBLERS AND
REPAIRMEN, MISCELLANEOUS PRODUCTS,
N.E.C.**

This residual group includes other occupations not elsewhere classified; for example, those concerned with fabricating, assembling or repairing sporting goods, toys, brooms, brushes and mops, buttons, sunglasses and a variety of other products. Typical examples of occupational titles covered by this residual group definition are:

Button Cutter(misc. prod. fab., n.e.c.)

Doll Repairer(sport. & toy)

Mophead Trimmer(misc. prod. fab., n.e.c.)

Paint-Roller-Sleeve Attacher(misc. prod. fab., n.e.c.)

Plastic-Lens Dyer(scient. & ind. equip., n.e.c.)

Rubber-Stamp Assembler(misc. prod. fab., n.e.c.)

Seamless-Ball Moulder(sport. & toy)

Tile Paster(cement, stone & clay)

Towel-Cabinet Serviceman(mech. equip., n.e.c.)

ALPHABETICAL INDEX
OF
JOB AND OCCUPATIONAL TITLES

Refer to the Alphabetical Index in the most recent edition of the CCDO GUIDE for a complete listing of all job and occupational titles appearing in CCDO publications.

GUIDE TO QUALIFICATIONS PROFILE FACTORS

PHYSICAL ACTIVITIES (PA)

1. Strength (lifting, carrying, pushing, pulling) shown in terms of:
S - Sedentary work (10 lbs. max)
L - Light Work (20 lbs. max)
M - Medium work (50 lbs. max)
H - Heavy Work (100 lbs. max)
VH - Very Heavy Work (over 100 lbs.)
2. Climbing and/or Balancing
3. Stooping, Kneeling, Crouching and/or Crawling
4. Reaching, Handling, Fingering and/or Feeling
5. Talking
6. Hearing
7. Seeing, in terms of: acuity far and near, depth perception, accommodation, colour vision and field of vision.
8. Controls: Operating machinery requiring the use of body members and eye-hand-foot co-ordination.
Hand-Arm: Controlling the operation of machinery using only hand(s) and arm(s).
Foot Leg: Controlling the operation of machinery using only the leg(s) and one or both feet.
Eye-Hand-Foot Co-ordination: Controlling the operation of machinery requiring the co-ordination of movement of the hand and foot with each other in accordance with visual stimuli.

ENVIRONMENTAL CONDITIONS (EC)

1. Work Location
I - Inside
O - Outside
B - Both
2. Extremes of cold plus temperature changes
3. Extremes of heat plus temperature changes
4. Wet and/or humid
5. Noise and/or vibration
6. Hazards, in terms of:
- mechanical
- electrical
- burns
- explosives
- radiant energy
- heights
- dangerous footing
7. Atmospheric Conditions, in terms of:
- fumes
- odours
- dusts
- mists
- gases
- poor ventilation

WORKER FUNCTIONS (DPT)

The three broad categories of functional relationships to Data, People and Things are as follows:

DATA (1st digit)

- 0 Synthesizing
- 1 Co-ordinating
- 2 Analyzing
- 3 Compiling
- 4 Computing
- 5 Copying
- 6 Comparing
- 7*
- 8 No Significant Relationship

PEOPLE (2nd digit)

- 0 Mentoring
- 1 Negotiating
- 2 Instructing
- 3 Supervising
- 4 Diverting
- 5 Persuading
- 6 Speaking-Signalling
- 7 Serving
- 8 No Significant Relationship

THINGS (3rd digit)

- 0 Setting-Up
- 1 Precision Working
- 2 Operating-Controlling
- 3 Driving-Operating
- 4 Manipulating-Operating
- 5 Tending
- 6 Feeding-Offbearing
- 7 Handling
- 8 No Significant Relationship

GENERAL EDUCATIONAL DEVELOPMENT (GED)

Levels	Approximate Duration of Schooling
6 -	17 years plus
5 -	13 to 16 years
4 -	11 to 12 years
3 -	9 to 10 years
2 -	6 to 8 years
1 -	Up to 6 years

* The functional digit 7 is not used in the Data Table in the CCDO.

SPECIFIC VOCATIONAL PREPARATION (SVP)

- 1 - Short Demonstration Only
- 2 - Anything Beyond short demonstration up to and including 30 days
- 3 - Over 30 days up to and including 3 months
- 4 - Over 3 months up to and including 6 months

- 5 - Over 6 months up to and including 1 year
- 6 - Over 1 year up to and including 2 years
- 7 - Over 2 years up to and including 4 years
- 8 - Over 4 years up to and including 10 years
- 9 - Over 10 years

APTITUDES

Aptitude Factors

- G General Intelligence
- V Verbal Ability
- N Numerical Ability
- S Spatial Perception
- P Form Perception
- Q Clerical Perception
- K Motor Co-ordination
- F Finger Dexterity
- M Manual Dexterity
- E Eye-Hand-Foot Co-ordination
- C Colour Discrimination

Aptitude Levels

(in terms of working population)

- 1 Upper 10%
 - 2 Upper Third exclusive of the Highest 10%
 - 3 Middle Third
 - 4 Lowest Third exclusive of the Lowest 10%
 - 5 Lower 10%
- When these levels are underlined, they are considered significant for satisfactory job performance.

INTEREST FACTORS

1. Things and Objects
2. Business Contact with People
3. Routine, concrete and organized work
4. Working for people for their presumed good as in the social welfare sense, or for dealing with people and language in social situations.
5. Work resulting in prestige or esteem of others
6. People and Communication of Ideas
7. Scientific and Technical Work
8. Abstract and creative work or experiences
9. Non social work, carried on in relation to processes, machines and techniques
0. Work resulting in tangible, productive satisfaction

TEMPERAMENT FACTORS

1. Variety and Change
2. Repetitive, Short Cycle
3. Under Specific Instructions
4. Direction, Control, Planning
5. Dealing with People
6. Isolation
7. Influencing People
8. Performing Under Stress
9. Sensory or Judgmental Criteria
0. Measurable or Verifiable Criteria
- X. Interpretation of ideas, facts, feelings
- Y. Precise attainment of set limits, tolerances or standards

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